AMERICAN ANTHROPOLOGIST

AMERICAN STATE LIBRARY

NEW SERIES

ORGAN OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION,
THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON,
AND THE AMERICAN ETHNOLOGICAL
SOCIETY OF NEW YORK

PUBLICATION COMMITTEE

J. WALTER FEWKES, *Chairman ex-officio;* F. W. HODGE, *Secretary ex-officio;* JUAN B. AMBROSETTI, FRANK BAKER, FRANZ BOAS, ALEXANDER F. CHAMBERLAIN, STEWART CULIN, GEORGE A. DORSEY, ALICE C. FLETCHER, GEORGE BYRON GORDON, W. H. HOLMES, B. TALBOT B. HYDE, H. VON IHERING, A. L. KROEBER, RODOLFO LENZ, NICOLAS LEÓN, GEORGE GRANT MACCURDY, CHARLES PEABODY, F. W. PUTNAM, EDWARD SAPIR, FREDERICK STARR, CLARK WISSLER.

F. W. HODGE, *Editor*, WASHINGTON, D. C.
J. R. SWANTON AND ROBERT H. LOWIE, *Associate Editors.*

VOLUME 14

LANCASTER, PA., U. S. A.
PUBLISHED FOR
THE AMERICAN ANTHROPOLOGICAL ASSOCIATION
1912

MICHIGAN STATE
LIBRARY

PRESS OF
THE NEW ERA PRINTING COMPANY
LANCASTER, PA.

CONTENTS OF VOLUME 14

ARTICLES

PAGE

The Problems of the Unity or Plurality and the Probable Place of Origin of the American Aborigines. J. WALTER FEWKES, ALEŠ HRDLIČKA, WILLIAM H. DALL, JAMES W. GIDLEY, AUSTIN HOBART CLARK, WILLIAM H. HOLMES, ALICE C. FLETCHER, WALTER HOUGH, STANSBURY HAGAR, PAUL BARTSCH, ALEXANDER F. CHAMBERLAIN, ROLAND B. DIXON 1

Some Problems in the Ethnology of the Crow and Village Indians. ROBERT H. LOWIE 60

Aboriginal Remains in the Champlain Valley—Third Paper. G. H. PERKINS. (Plates I–V) 72

Lucayan Remains on the Caicos Islands. THEODOOR DE BOOY. (Plate VI) 81

Wakondagi. ALICE C. FLETCHER 106

Prolegomena to the Study of the San Blas Language of Panamá. J. DYNELEY PRINCE. (Plates VII–VIII) 109

Osage Marriage Customs. FRANCIS LA FLESCHE 127

Remarks on Radosavljevich's Critical Contribution to "School Anthropology." MAURICE FISHBERG 131

Anthropology at the Washington Meeting, with Proceedings of the American Anthropological Association for 1911. GEORGE GRANT MACCURDY 142

The Psychological Aspects of the Culture-Environment Relation. CLARK WISSLER 217

Language and Environment. EDWARD SAPIR 226

The Tewa Indian Game of "Cañute." JOHN P. HARRINGTON. (Plates IX–XVII) 243

Certain Rare West-coast Baskets. H. NEWELL WARDLE. (Plates XVIII–XX) 287

Notes on the Ancient Art of Central America. GEORGE GRANT MACCURDY 314

The Creek Indians as Mound Builders. JOHN R. SWANTON 320

The Ancient Quipu, a Peruvian Knot Record. L. LELAND LOCKE. (Plates XXI–XXIV) 325

Some Notes on the Pawumwa Indians. J. D. HASEMAN 333

61169

The Varieties, Classification, and Origin of Magic. JAMES H. LEUBA 350
Physiognomy of the Indians of Southern New England. HARRIS HAWTHORNE WILDER. (Plates XXV–XXVIII) 415
The Aboriginal Use of Turquois in North America. JOSEPH E. POGUE. (Plates XXIX–XXXII) 437
The Kitselas of British Columbia. GEORGE T. EMMONS. (Plate XXXIII) 467
Tewa Relationship Terms. JOHN P. HARRINGTON 472
The Allentiacan, Bororoan, and Calchaquian Linguistic Stocks of South America. ALEXANDER F. CHAMBERLAIN 499
An Ancient New Jersey Indian Jargon. J. Dyneley Prince 508
The Mexican Maize Season in the Codex Fejérváry-Mayer. STANSBURY HAGAR. (Plate XXXIV) 525
Changes in the Bodily Form of Descendants of Immigrants. FRANZ BOAS 530
A Foreword on the Social Organization of the Creek Indians. JOHN R. SWANTON 593
The Origin of Totemism. A. A. GOLDENWEISER 600
Certain Iroquois Tree Myths and Symbols. ARTHUR C. PARKER. (Plates XXXV–XXXVI) 608
International Congress of Prehistoric Anthropology and Archeology, Geneva. GEORGE GRANT MACCURDY 621
Columns of Infamy. ROBERT FLETCHER 636
The Indian Linguistic Stocks of Oaxaca, Mexico. WILLIAM H. MECHLING. (Plate XXXVII) 643

DISCUSSION AND CORRESPONDENCE

The Methods of English Ethnologists (Wallis), 178. Notes on Certain Usages Relating to Linguistic Work (Harrington), 186. Method in the Study of Totemism (Lang), 368. Andrew Lang on Method in the Study of Totemism (Goldenweiser), 382. Traces of the Stone Age among the Eastern and Northern Tribes (Skinner), 391. Educational Theories (Wallis), 395. American and English Methods in Ethnology, 398. International Congress of Americanists (MacCurdy), 399. Origin of Certain Earth Circles (Bushnell), 403. Origin of the Word *Lagetto* (Gerard), 404. An Ingenious Method of Causing Death Employed by the Obeah Men of the West Indies (Clark), 572. The Root *Kompau:* Its Forms and Meaning (Gerard), 574. Mr Gerard and the Root *Kompau* (Michelson), 577. "Women's Languages" (Chamberlain), 579. W J McGee

Obituary (F. W. H.), 683. Robert Fletcher Obituary (D. S. Lamb), 687. Andrew Lang Obituary (Wallis), 690. Relationship of the Indian Languages of California (Dixon and Kroeber), 691. Death of Chief John A. Gibson (Goldenweiser), 692.

ANTHROPOLOGIC MISCELLANEA

International School of American Archæology and Ethnology in Mexico, 192. Some notable works on South American archeology, 194. Dr Paul Topinard, 196. Augustus Henry Keane, 197. The so-called "Moors" of Delaware, 199. Marking the Oregon trail, 200. All-Slav congress, 200. The Linden Museum at Stuttgart, 201. Brotherhood of North American Indians, 202. Museums of the Brooklyn Institute, 202. International congresses, 203. Peruvian antiquities, 204. Excavations at Meroë, 204. The Spanish archives, 205. Chito Hajo, 205. "Current Anthropological Literature," 205. Archeology and art, 206. Minor notes, 207. The Peruvian expedition of 1912, 405. Prepared human head, 405. Anthropological work by the Geological Survey of Canada, 407. International Congress of Anthropological Sciences, 408. Death of Henry Jones, 408. Eric Boman, 409. Clarence B. Moore's researches, 409. Miniature Indian baskets, 410. American Museum of Natural History, 410. Minor notes, 411. An important manuscript discovery, 582. Indian diseases and mortality, 583. Warren K. Moorehead's researches, 584. Prehistoric implements near Halifax, England, 583. Excavations near Carchemish, 585. Lefthandedness among Papuans, 586. Rock carvings in France, 586. Early man in Switzerland, 587. Minor notes, 587. Nineteenth International Congress of Americanists, 695. Frederick Starr's researches, 696. Investigations at Tiahuanacu, 698. University of Pennsylvania Museum, 699. Anthropology at the Dundee meeting, 700. Researches for the San Diego Exposition, 701. Vilhjálmur Stefánsson's explorations, 702. Archeological explorations in Maine, 703. Mr Bryce on the science of man, 704. Congress of Religious Ethnology, 704. Death of F. J. Gillen, 705. Conserving the Indians, 706. Aùrél Török, 706. A California mission pageant, 706. Minor notes, 705.

American Anthropological Association, officers and members..... 210
Proceedings of the Anthropological Society of Washington..... 563

American Anthropologist

NEW SERIES

VOL. 14 JANUARY–MARCH, 1912 No. 1

THE PROBLEMS OF THE UNITY OR PLURALITY AND THE PROBABLE PLACE OF ORIGIN OF THE AMERICAN ABORIGINES[1]

INTRODUCTORY REMARKS

BY J. WALTER FEWKES, PRESIDENT OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION

OUR session this afternoon will be devoted to a consideration of the unity or plurality of the aboriginal American race and the probable place of its origin. It will practically take the form of a discussion, the various aspects of the subject being presented by those who have given it special attention. In opening this discussion I shall simply make a few suggestions and emphasize a few salient points, some of which others, better able than myself to present an authoritative treatment, may deem worthy of elaboration.

Far from being a novel one in the sessions of this Association, some aspect of the question of the origin of the American race has come to be almost perennial, and it acquires greater interest as increase in our knowledge of the subject offers new points of approach. At what epoch man came to our continent from a former home; how he made his way hither; and his history since he came, are questions that possess greater and greater attraction as the science of man becomes broader and deeper. While the majority

[1] Discussion at a joint session of the American Anthropological Association and Section H of the American Association for the Advancement of Science held at the U. S. National Museum, Washington, December 27, 1911.

of anthropologists hold that man's original home was in Eurasia, there are those who advance reasons which in their judgment are equally adequate to prove that he was autochthonous in America, whence he spread to the Old World. Some students have held that America was peopled from the Old World because conditions of life were more complex on that continent than in the New, and because the simians most closely allied anatomically to man are indigenous to the Eastern Hemisphere. As none of the higher apes occur in America, it is reasoned that man, who is regarded as related to these animals, could not have been evolved in America. If we accept the theory that man originated in the Old World, it is evident that his colonization of America is a question of mode of migration, which resolves itself into a geographical or a geological one. An adequate solution of our problem must draw contributions from several sciences—geology, geography, comparative anatomy, and culture history. The distribution of animal or food plants, the direction of ocean currents and winds, the changes in continental masses—all must be considered.

Necessarily the subject of our proposed discussion centers about that of the antiquity of man in America. When did man come to this continent? Was it in a late geological epoch, making him contemporaneous with animals now extinct like the giant sloths, mammoths, and mastodons; or was it later? It can readily be seen that the question becomes a paleontological one, and so far as the determination of the age of the strata in which the anthropologist finds human remains is concerned, a purely geological problem. Unless we are prepared to accept an autochthonous origin of man or his evolution from higher animals in America, the means of primitive migration available, and the conditions of culture implied by a sea voyage, must not be overlooked. It is evident that the situation of islands, the configuration of land, and changes in its contour, are directly connected with all theories of the peopling of America. Both the course and velocity of ocean currents, and the distribution and quantity of food supplies and fresh water, must be considered in this problem, which draws from so many sources for its solution.

It is important, in this discussion, to consider the physical and cultural condition of the first men that landed in America. Were they low in the scale, scarcely raised above their nearest animal relatives, or did they bring with them well-developed arts? For an answer to these questions, so far as ancestry is concerned, we must consult the physical anthropologist and the archeologist. Whence arose all this great complexity of tongues, rivaling in number those of Babel? Are the present linguistic stocks due to consolidation of a still greater number, or were they derived from one ancestral form? Are there any essential lexical or grammatical relationships between the languages of the Old World and the New, and if so, what do their resemblances mean? The philologist may shed light on these questions. The observer finds evidences of many arts, symbols, ceremonies, and mythologies, comparable or identical with those of the Old World, which existed in prehistoric America. For the interpretation of these similarities we naturally turn to the ethnologist. They have been interpreted by some students as derivative, by others as due to independent origin. It is self-evident that they have a significant bearing on the subject we are to discuss.

At one time the Indians of our continent were regarded as rude savages, but the discovery of magnificent temples in Mexico and Central America, and the evidences of high culture, with advanced sociological conditions, in the lofty plateaus of South America, show that in dealing with the American race we are considering a people that in some places reached a high stage of development. The geographical limitations of the higher culture of aboriginal man in America also have a bearing on our discussion. A determination of the unity or plurality of type in the American race would appear to be fundamental, and one upon which rests the whole fabric of physical and cultural variation in different parts of the American continent. Many physical anthropologists have held that throughout the length of our continent, through all degrees of climate, from the frigid to the torrid zone, the American race is practically of one type. It is supposed that the ancestors of this race must have lived for ages in one environment which stamped upon it a common feature that could not be

eradicated by such great climatic differences. Where that ancestral home was, has not yet been made known, and if it could be determined an important step would be taken in the solution of our problem.

In their ultimate analysis ethnology and archeology are departments of history in its broadest significance; they belong to culture history, not recorded in writings, although traced by other equally decisive evidence. The discovery of America by Columbus was one of the most important and far-reaching events in human history, but it was not the original discovery of the American continent. Centuries before the great Genoese, man had developed a characteristic culture upon its soil. Most of the evidence for the antecedent discovery of America is archeological, and we designate the epoch prehistoric, but all this belongs to the evolution of culture and may therefore be called culture history. The discussion of the archeological evidence of the discovery of America by man prior to Columbus is facilitated by determining to which of the races of the Old World he is most closely allied.

The laws governing the dispersion of animals and plants may well be considered in the discussion of the peopling of the American continent. So far as man is regarded as an animal he is subservient, especially in his primitive condition, to the same laws of geographical dispersion that are so potent in the distribution of faunas and floras. But in all considerations of more cultivated man, his place of origin and dispersion over the earth's surface, the psychic element should not be overlooked, for while he shares with animals certain mental characters, his migration on the earth is due primarily to the greater development of his mind. In some physical features he may be called weak and helpless in a struggle for supremacy, but no animal equals him in relative cranial capacity, and he outranks all in mental power. His mind, not his body, has conquered the world, and the use of that mind makes it possible for him to adapt himself to all climates and environments. The development of ideas, or culture history and its modifications by surroundings, is closely allied to our subject.

Historical Notes

By Aleš Hrdlička

The program calls first for a presentation of the historical side of the subject, or, strictly speaking, for a brief history of the opinions that have been held on the question of the nature and origin of the American natives since their discovery. This history, it may be said at the outset, is largely one of speculation, fettered on one side by ignorance and on the other by ancient traditions.

When Columbus discovered the New World he and his companions imagined, as is well known, that they had reached India, and the people met were naturally taken for natives of India. Later, as the true nature of the new land became better known, speculations concerning the newly discovered race took other directions, and some of the notions developed proved disastrous to the Indians. History tells us that many of the early Spaniards, up to Las Casas' time, reached the conclusion that, as no mention was made concerning the American people in Hebrew traditions, they could not strictly be regarded as men, equivalent to those named in biblical acounts, and this view, which eventually had to be counteracted by a special papal bull, led directly or indirectly to wholesale enslavement and destruction of the Americans.

One of the effects of this papal edict was that thenceforth the origin of the Indians was sought in other parts of the world, and the seeming necessity of harmonizing this origin with biblical knowledge led eventually to several curious opinions. One of these, held by Gomara, Lerius, and Lescarbot, was to the effect that the American aborigines were the descendants of the Canaanites who were expelled from their original abode by Joshua; another, held especially by McIntosh,[1] was that they were descended from Asiatics who themselves originated from Magog, the second son of Japhet; but the most widespread theory, and one with the remnants of which we meet to this day, was that the American Indians represented the so-called Lost Tribes of Israel.[2]

During the course of the 19th century, with Levèque, Hum-

[1] McIntosh, J., *Origin of the North American Indians*, New York, 1843.

[2] Adair, J., *History of the North American Indians*, London, 1775.

boldt,[1] McCullogh,[2] Morton,[3] and especially Quatrefages,[4] we begin to encounter more rational hypotheses concerning the Indians, although by no means a single opinion. Lord Kaimes, Morton, and Nott and Gliddon[5] professed the belief that the American natives originated in the New World and hence were truly autochthonous; Grotius believed that Yucatan had been peopled by early Christian Ethiopians; according to Mitchell the ancestors of the Indians came to this country partly from the Pacific ocean and partly from northeastern Asia; the erudite Dr McCullogh believed that the Indians orginated from parts of different peoples who reached America over lost land from the west "when the surface of the earth allowed a free transit for quadrupeds"; Quatrefages viewed the Americans as a conglomerate people, resulting from the fossil race of Lagoa Santa, the race of Paraná, and probably others, in addition to which he believed there had been settlements of Polynesians; and according to Pickering the Indians originated partly from the Mongolian and partly from the Malay.

The majority of the authors of the last century, however, including Humboldt, Brerewood, Bell, Swinton, Jefferson, Latham, Quatrefages, and Peschel,[6] inclined to the belief that all the American natives, excepting the Eskimo, were of one and the same race and that they were the descendants of immigrants from northeastern Asia, particularly from the "Tartars" or Mongolians.

The most recent writers, with one marked exception, agree entirely that this country was peopled through immigration and local multiplication of people; but the locality, nature, and time of the immigration are still much mooted questions. Some authors incline to the exclusively northeastern Asiatic origin; others, such as ten Kate and Rivet, show a tendency to follow Quatrefages in

[1] Humboldt, *Political Essay*, I, 115; Humboldt and Bonpland, *Voyage, Vue des Cordilleras*, Paris, 1810.

[2] McCullogh, *Researches, Philosophical and Antiquarian, Concerning the Aboriginal History of America*, Baltimore, 1829.

[3] Morton, S. G., *Distinctive Characteristics of the Aboriginal Race of America*, 2d ed., pp. 35–36, Philadelphia, 1844. (Also his *Crania Americana*, and *Origin of the Human Species*.)

[4] Quatrefages, *Histoire générale des races humaines*, Paris, 1887.

[5] Nott and Gliddon, *Types of Mankind*, and *Indigenous Races*. (The latter includes statements by Leidy and Morton.)

[6] Peschel, O., *The Races of Man*, p. 418, 1876.

attributing at least some parts of the native American population to the Polynesians; Brinton[1] held that they came in ancient times over a land connection from Europe; and Kollmann,[2] basing his belief on some small crania, believes that a dwarf race preceded the Indian in America.

A remarkable hypothesis concerning the origin of the American native population, deserving a few words apart, has within the last thirty years, and especially since the beginning of this century, been built up by Ameghino,[3] the South American paleontologist. This hypothesis is, in brief, that man, not merely the American race, but mankind, originated in South America; that man became differentiated in the southern continent into a number of species, most of which are now extinct; that from South America he migrated over ancient land connections to Africa, and from there peopled all the Old World; that a strain from the remaining portion multiplied and spread over South America; and that eventually, somewhere in relatively recent times, a portion of that branch which peopled Africa and then Asia, migrated, by the northern route, into North America. In part this theory is also favored by Sergi.

In addition there have been some suggestions that the Americans may have arrived from the "lost Atlantis"; and the theory has even been expressed that man, instead of migrating from northeastern Asia into America, may have moved in the opposite direction, and especially that, after peopling this continent, a part of the Americans reached Siberia.[4]

The Eskimo have been generally considered as apart from the

[1] Brinton, D. G., *The American Race*, New York, 1891.

[2] Kollmann, J., *Die Pygmäen* (Verh. d. Naturforsch. Ges. Basel, XVI, Basel, 1902).

[3] Ameghino, F., *El Tetraprothomo Argentinus* (Anal. Mus. Nac., XVI, Buenos Aires, 1907); also *Le Diprothomo platensis* (ibid., XIX, 1909).

[4] In this connection see also Campbell, J., Asiatic Tribes in N. America, *Proc. Canadian Inst.*, n. s., I, Toronto, 1881; Mason, O. T., Migration and the Food Quest: A Study in the Peopling of America, *Smithson. Rep. for 1894*, Wash., 1896, pp. 523–540; Morse, E. S., Was Middle America Peopled from Asia? *Popular Sci. Mo.*, Nov., 1898; Powell, J. W., Whence Came the American Indians? *Forum*, Feb., 1898; *Major Powell's Inquiry: Whence Came the American Indians? An Answer*, by J. Wickersham, Tacoma, Wash., 1899, pp. 1–28; Hallock, Chas., The Ancestors of the American Indigenes, *Amer. Antiquarian*, XXIV, no. 1, 1902, and the publications of the Jesup Expedition of the American Museum of Natural History, New York.

Indian, some holding that they preceded and others that they followed him. They have been connected generally with the northeastern Asiatics, but there are also those who see a close original relation between the Eskimo and the Lapps, and even between the Eskimo and the paleolithic Europeans.

These are, in brief, the various more or less speculative opinions that so far have been advanced in an effort to explain the ethnic identity and the place of origin of the American Indian; and it is only logical that the next word on these problems be given to physical anthropology, which deals with what are, on the whole, the least mutable parts of man, namely, his body and skeleton.

The Bearing of Physical Anthropology on the Problems Under Consideration

By Aleš Hrdlička

The somatology of the Indians, which barely saw its beginnings in the time of Humboldt and Morton, has now advanced to such a degree that at least some important generalizations concerning the American aborigines are possible. We have now at our disposal for comparison, in American museums alone, upward of twenty thousand Indian crania and skeletons from all parts of the continent, while several thousand similar specimens are contained in European collections. A considerable advance, particularly in North America, has also been made in studying the living natives. Unfortunately we are much less advantageously situated in regard to comparative skeletal material as well as with respect to data on the living from other parts of the world, particularly from those parts where other indications lead us to look for the origin of the Indian.

What can be stated in the light of present knowledge concerning the American native with a fair degree of positiveness is that, first, there is no acceptable evidence, or any probability, that man originated on this continent; second, that man did not reach America until after attaining a development superior to that of even the latest Pleistocene man in Europe, and after having undergone advanced and thorough stem and even racial and tribal differentiation; and third, that while man, since the peopling of

this continent was commenced, has developed numerous secondary, subracial, localized structural modifications, these modifications can not yet be regarded as fixed, and in no important feature have they obliterated the old type or types of the people.

We are further in a position to state that, notwithstanding the various secondary physical modifications referred to, the American natives, barring the more distantly related Eskimo, present throughout the Western Hemisphere numerous important features in common, which mark them plainly as parts of one stem of humanity. These features are:

1. The color of the skin. The color of the Indian differs, according to localities, from dusky yellowish-white to that of solid chocolate, but the prevailing color is brown.

2. The hair of the Indian, as a rule, is black and straight; the beard is scanty, especially on the sides of the face, and it is never long. There is no hair on the body except in the axillæ and on the pubis, and even there it is sparse.

3. The Indian is generally free from characteristic odor. His heart-beat is slow. His mental characteristics are much alike. The size of the head and of the brain cavity is comparable throughout, averaging somewhat less than that of white men and women of similar stature.

4. The eyes as a rule are more or less dark brown in color, with dirty yellowish conjunctiva, and the eye-slits show a prevailing tendency, more or less noticeable in different tribes, to a slight upward slant, that is, the external canthi are frequently more or less higher than the internal.

5. The nasal bridge, at least in men, is throughout well developed, and the nose in the living, as well as the nasal aperture in the skull (barring individual and a few localized exceptions), show medium or mesorhinic relative proportions. The malar regions are as a rule rather large or prominent.

6. The mouth is generally fairly large, the lips average from medium to slightly fuller than in whites, and the lower facial region shows throughout a medium degree of prognathism, standing, like the relative proportions of the nose, about midway between those

found in whites and negroes. The chin is well developed. The teeth are of medium size, when compared with those of mankind in general, but perceptibly larger when contrasted with those of the white American; and the upper incisors are characteristically shovel-shaped, that is, deeply and peculiarly concave on the buccal side. The ears are large.

7. The neck, as a rule, is of only moderate length, and is never very thin; the chest is somewhat deeper than in average whites; the breasts of the women are of medium size and generally more or less conical in form. There is a complete absence of steatopygy; the lower limbs are less shapely and especially less full than in whites; the calf is small.

8. The hands and feet, as a rule, are of relatively moderate or even of small dimensions, and what is among the most important of all the characteristics, the relative proportions of the forearms to arms and those of the distal parts of the lower limbs to the proximal (or, in the skeleton, the radio-humeral and tibio-femoral indices), are in general, throughout the two parts of the continent, of much the same average value, which differs from that of both the whites and the negroes, standing again in an intermediary position.

This list of characteristics which are, generally speaking, shared by all American natives, could readily be extended, but the common features mentioned ought to be sufficient to make clear the fundamental unity of the Indians.

The question that necessarily follows is, "Which, among the different peoples of the globe, does the Indian, as here characterized, most resemble?" The answer, notwithstanding our imperfect knowledge, can be given conclusively. There is a great stem of humanity which embraces people ranging from yellowish white to dark brown in color, with straight black hair, scanty beard, hairless body, brown and often more or less slanting eye, mesorhinic nose, medium prognathism, and in every other essential feature much like the American native; and this stem, embracing several races or types and many nationalities and tribes, occupies the eastern half of the Asiatic continent and a large part of Polynesia.

From the physical anthropologist's point of view everything

indicates that the origin of the American Indian is to be sought among the yellowish-brown peoples mentioned. There are no two large branches of humanity on the globe that show closer fundamental physical relations.

But difficulties arise when we endeavor to assign the origin of the Indian to some particular branch of the yellowish-brown population. We find that he stands quite as closely related to some of the Malaysian peoples as to the Tibetans, the Upper Yenisei natives, and some of the northeastern Asiatics. It is doubtless this fact that accounts for some of the hypotheses concerning the origin of the Indian that attribute his derivation partly to the "Tartars" and partly to the Polynesians.

All that may be said on this occasion is that the circumstances point strongly to a coming, not strictly a migration, over land, ice, water, or by all these media combined, from northeastern Asia, of relatively small parties, and to comings repeated probably nearly to the beginning of the historic period.

As to Polynesian migrations within the Pacific, such were, so far as can be determined, all relatively recent, having taken place when America doubtless had already a large population and had developed several native cultures. It is, however, probable that after spreading over the islands, small parties of Polynesians may have accidentally reached America; if so, they may have modified in some respects the native culture, but physically, being radically like the people who received them (barring their probably more recent negro mixture), they would readily blend with the Indian and their progeny could not be distinguished.

The conclusions, therefore, are that the American natives represent in the main a single stem or strain of people, one *homotype;* that this stem is the same as that of the yellow-brown races of Asia and Polynesia; and that the main immigration of the Americans has taken place gradually by the northwestern route, in the Holocene period, and after man had reached a relatively high stage of development and multiple racial differentiation. The immigration, in all probability, was a dribbling and prolonged overflow, likely due to pressure from behind and a search for better hunting and

fishing grounds. This was followed by rapid multiplication, spread, and numerous minor differentiations of the people on the new, vast, and environmentally highly varied continent. It is also probable that the western coast of America, within the last two thousand years, was on more than one occasion reached by small parties of Polynesians, and that the eastern coast was similarly reached by small groups of whites; but these accretions have not modified greatly, if at all, the mass of the native population.

On the Geological Aspects of the Possible Human Immigration between Asia and America

By William H. Dall

The assumption is generally made that migration by prehistoric man between the continents of Asia and America was predominantly (if not exclusively) by way of the northeastern extreme of the one and the northwestern extreme of the other body of land.

This idea being taken as a starting point for consideration of the question that has been assigned to me in this discussion, it devolves upon us to consider the local conditions under which migration might have taken place.

To the eye of one unfamiliar with the Bering sea region, and judging solely by the appearance of ordinary maps, it would appear obvious that the long chain of the Aleutian islands together with the Alaska peninsula forms a most convenient series of stepping stones from Kamchatka to America, which, given a certain amount of elevation above its present level, might almost form a complete land bridge between the two continents. Such assumptions have frequently been made in discussing the peopling of America in prehistoric times.

How unfounded are these ideas will presently be shown.

Bering sea, taken in a broad sense, may be divided into two characteristic areas, by a line obliquely drawn from the southeastern extreme of the Chukchi peninsula to the Alaska peninsula, curving sufficiently to the southwest to include all the islands situated in the midst of the sea, St Lawrence, St Mathew, the Pribilof islands, and their associated islets.

To the northeast of this line the sea is shallow, averaging less than fifty fathoms, and over a large part of the area less than thirty fathoms. To the southwest of the line the continental shelf falls abruptly to oceanic depths of 1000 to 2000 fathoms or little less. While the mud brought down by the Yukon, Kuskokwim, and other large American rivers undoubtedly contributes somewhat to the shoaling of Bering sea, especially near the deltas, the great submarine plateau is not an accumulation of mud, but a submerged portion of the continent, composed, at least to some extent, of Miocene and Pliocene fossiliferous rocks, masses of which, containing fossils, have been brought up, entangled in the eruptive rocks, of which the islands previously mentioned are formed. This is notably the case on the island of St Paul,[1] and the same rocks with the same fossils come to the surface in the vicinity of Nushagak on the continent to the eastward.

The deep water of the western and southern portion of Bering sea extends northward to the Chukchi peninsula on the Asiatic side of Bering strait, heading in the deep bight known as Plover bay; and on the south extends, roughly parallel with the Kurile islands, to northern Japan.

The sea on either side of the Aleutian chain, and frequently between the groups into which the chain is divided, is extremely deep, 800 fathoms or more being had in some places within a mile or two of the shore, and 1000 to 2000 fathoms within a relatively short distance farther seaward.

These islands mark a line of weakness in the earth's crust, from which have emerged granitic and porphyritic eruptive rocks, against which have been deposited Eocene, Oligocene, and Miocene sedimentary strata, subsequently invaded by basaltic eruptives, which are still occasionally thrust forth.

Between the westernmost islands of the Aleutian chain and the continent of Asia lies a stretch of sea some 350 miles in width, and now one of the foggiest, roughest, and most continuously tempestuous seas in the world. Through this stretch pours the Arctic

[1] A list of these fossils is given in the *U. S. Report on the Fur Seals and Fur Seal Islands of the North Pacific Ocean*, part III, 1899, pp. 544–545.

current in a southwesterly direction with a rate of nearly a mile an hour to the southward in quiet weather. It is true that the Commander islands lie a little to the northward in this gap, but no relics of habitation by man previous to Bering's voyage have been found on them, and the discovery of the sea-cow there, which had previously been exterminated for use as food wherever man is known to have been, is good evidence that primitive man had never invaded the last refuge of that now extinct species.

We must suppose that man on first arriving in America was in a low stage of culture, and, while perhaps possessed of rude canoes, would not have had means of navigating a stormy sea, 350 miles wide, without compass, starguides,[1] or landmark, and across a current that would have swept him far to the southward of the Aleutians before he could possibly have reached in canoes the most westerly members of the group.

My conclusion is that migration from Asia to America by the Aleutian chain was absolutely impossible to primitive man, and that this route must be discarded entirely from our hypotheses.

I may add here that the legends, geographical names, and language, as well as the typically Eskimo culture, of the Aleuts, all point to their invasion of the Archipelago from the eastward, as the result of tribal wars, and before they had developed their specialized culture to the point it finally attained.[2]

The next region to be considered is that about Bering strait.

Here we have shallow water, not exceeding 200 feet in depth anywhere between the continents at the strait, and to reach a point where the sea is seventy-five fathoms deep one must go several hundred miles northward.

The so-called Seward or Kaviak peninsula reaches out toward Asia from the American continental mass, and only about fifty miles away, on the Asiatic eastern extreme rises East Cape to a commanding height. Midway of the strait are the small but inhabited islands called the Diomedes.

[1] The stars are not visible in this latitude except in winter, and if visible would be concealed by the perpetual fog.

[2] See: Dall, Origin of the Innuit, *Contr. to N. Am. Ethnology*, vol. 1, pp. 93–98, 1877; Remains of Later Prehistoric Man, etc., *Smithsonian Contr. to Knowledge*, no. 318, 1878.

The geology of the American peninsula differs curiously from that of the Chukchi peninsula on the opposite side of the strait. It comprises a complex of rocks, schistose and slaty to a large extent, from which the gold placers have been derived.

It is margined by elevated beaches of Pliocene and Pleistocene age, in which the first discovery of gold was made, and which indicate a gradual rise of the land from Pliocene to the recent Quaternary time. At no time when we might suppose primitive man to have invaded America is there evidence that the land of the peninsula and the region of the strait were higher than at present. On the contrary, in the Pliocene at least we have unmistakable evidence that not only was the land lower and the climate somewhat milder (approximating that of the Aleutian region of today) but that the communication between the North Atlantic and North Pacific waters was more open than today. As evidence of this I may cite the fact that, while the type of *Littorina* of which *L. obtusata* L. and *L. palliata* Say are characteristic is not now known from anywhere west of the Atlantic coast of America, a fine species of this sort is found in the Pliocene of Nome, Alaska; and in the Pliocene of Sankoty Head, Nantucket, Mass., are two species of bivalves no longer living in the Atlantic, but found both fossil in the Nome Pliocene and living in the waters of Bering sea.

With the coming of the Glacial epoch a lowering of temperature took place in this region which has, with various fluctuations, continued practically to the present time, attended, after the melting of the glaciers, by a gradual and very moderate elevation of the land which is believed to be still in progress. Very recent indications of it have been observed in the vicinity of St Michael on Norton sound.

On the opposite side of Bering strait the geological character is quite different. The Diomede islands in the strait are granitic domes of massive eruption. The high land of the Chukchi peninsula is largely of the same character, the rock forms having been modified to some extent by small local glaciers and the disintegrating influence of very low winter temperatures. There is no trace of the gold-bearing series of schistose rocks to which the metallic riches of

Alaska are due, the utmost endeavors of Russian and American explorers and prospectors having revealed no indications of gold in commercial quantities. It is only some hundred and thirty miles westward from Bering strait that sedimentary rocks are reported. Moreover, it is well known that the vast boreal tundras of the North Siberian coast have but recently (in a geological sense) emerged from the sea; the bones of whales now existing on the surface in places many miles from the coast of the Polar sea.

It is an historical fact that the present group of Asiatic Eskimo (not the Chukchi) are migrants from America, driven by tribal wars not many centuries ago, and that at one time their colonies extended much farther west and south than at the present time.[1]

For the discontinuity of the land at Bering strait (the region to the north of the strait being excluded from the discussion) during and after the Glacial epoch, there is evidence of a certain weight in the distribution of the fauna. In the matter of the mollusca, if the land had been continuous then we should expect to find the same marine fauna on both sides of the strait now.

Excluding species belonging to the circumpolar fauna, strictly speaking, and which largely date back to the Miocene; and the few forms that have crept from the South Pacific abyssal waters north to Bering sea and its cold shallows, we find the unexpected fact that the fauna of the Asiatic coast and that of the American coast

[1] For the historical data and other information about the Innuit of Asia and the Diomedes, see the following sources:

Gerhard Friedrich Müller, *Voyages from Asia to America;* translated by Thos. Jeffreys; second ed., 1764, pp. 25–27.

W. H. Dall, *Alaska and Its Resources*, Boston, Lee and Shepard, 1870, pp. 375–6.

———, *Contributions to N. Am. Ethnology* (Powell Survey), I, 1877, pp. 13–14, 93–106.

———, Remains of Later Prehistoric Man, etc., *Smithsonian Contr. to Knowledge*, no. 318, 1878.

———, *Proc. Royal Geographical Society*, III, no. 9, Sept., 1881, pp. 568–70.

———, Chukchee and Namollo People, *American Naturalist*, Nov., 1881, pp. 857–868.

———, *U. S. Coast and Geodetic Survey, Annual Rep. for 1890*, app. 19, p. 759, note, 1891.

For data on the physical conditions at Bering strait see:

W. H. Dall, Notes on Alaska and the vicinity of Bering Strait, *Am. Journ. Sci.*, XXI, Feb. 1881, pp. 104–111, and map.

are sharply differentiated, and that Bering strait, or perhaps I should say the deep submarine valley entering Plover bay just west of the strait, separates two markedly distinct faunas.

If we take the Quaternary vertebrata, the woolly rhinoceros on the Asiatic side, with the musk ox and the mazama (Rocky mountain goat) on the American side, have left their bones scattered on the surface close to the strait, but neither has been found on the opposite side. The existing mountain sheep (*Ovis nivalis*) of the mountains west of the strait and that of the Seward peninsula east of the strait (*O. dalli*) are very distinct species. Even the harlequin seal (*Histriophoca*), common within a few miles of the strait in Asia, is not known from America.

Birds like the spoonbilled sandpiper and the Siberian bulfinch are known from America only by a single straggler in each case, while the former at least is far from rare in Plover bay. Scores of American birds will occur to the ornithologist as abundant in western Alaska yet unknown from eastern Siberia. If the land had been continuous in the Quaternary would not many of them have extended their range to both continents and continued their visits, by inherited tendency, during present conditions?

Too much weight must not be laid on these facts, yet it cannot be denied that they have some significance.

I was told by the natives that, though the ice in the strait is rarely at a standstill in winter, American caribou even now occasionally cross, only to meet their fate at the hands of the native hunters. Foxes, Arctic hare, and the polar bear roam freely over the ice; and are occasionally seen on bits of floe when ice breaks up in the spring. If the ice were stationary in the strait, as may well have been the case at times in the past (since the heavy floe occasionally very nearly touches bottom there at the present day) it may well have afforded a road to primitive man not less hardy than the animals upon which he subsisted.

It is therefore eminently probable that the migration from Asia took place when the culture of the invaders was sufficiently advanced for them to be able to cross the strait in canoes; or, like the present Eskimo, they may have during glaciation followed the

marine mammals, the walrus and the seal, along the edges of immovable floe ice closing the strait perhaps for some centuries.

One other hypothesis remains. The elevation of the Seward peninsula may be correlated with a sinking of the seabottom in the region of shallow water north of Bering strait.

Whaling vessels cruising in the vicinity of Wrangell island in open seasons report to me the existence of bright green spots of vegetation on its shores, such as are, a little farther south, the invariable sign of the existence of a prehistoric kitchen-midden; also the Point Barrow people have myths and legends of a people clad entirely in skins of the polar bear who live somewhere in the unexplored part of the Polar sea to the northwest. These people are very real to them; even a few years ago, Capt. Herendeen was called out of his hut during the arctic night, because a party of these Polar people had, it was alleged, been seen by some of the Point Barrow people far out on the floe to the northwest of the Point, traveling with hand sledges. Men who disappear when hunting seal on the edge of the floe in winter are sometimes believed to have either joined some party of the Polarites or to have been killed by them. Whatever weight, if any, we may place upon such ancient beliefs, and whatever measure of probability we may allot to the hypothesis of former land-bridges to the north of Bering strait, the fact remains that there is as yet nothing pointing to the likelihood of any more substantial connection of the two continents than exists at the present time, at least during the period when primitive man may have invaded America.

Paleontological Evidence Bearing on the Problem of the Origin of the American Aborigines

By James W. Gidley

That man did not make his appearance in America until long after he was known to have existed in Europe and Asia is generally conceded by vertebrate paleontologists. Up to the present time the earliest authentic geological records of the existence of prehistoric man in America have been found only in beds of comparatively recent date, the formations containing such evidence being

certainly of later date than the middle Pleistocene, and probably not older than the post-glacial epoch.

In contrast with the careful and systematic way in which the Pleistocene mammals of Europe have been studied, our knowledge of the fauna of that age in North America is at present very unsatisfactory, and many of our theories and speculations concerning it are based on insufficient and incomplete data, which are much in need of a thorough revision. However, regarding the more conspicuous mammals at least, their general character, order of appearance, and probable origin have been fairly well worked out, and may throw some light on the probable time of appearance and place of origin of the American aborigines.

At the beginning of the Pleistocene, European mammals of modern type first began to make their appearance in North America. These and subsequent arrivals of Old World forms, together with the species indigenous to the country, and with the great edentates and other South American forms which had made their way into North America by way of the Isthmus of Panama, united to form on this continent, in mid-Pleistocene time, a vast assemblage of most varied forms of mammal life. Included in this fauna were many species of true horses, camels, llamas, tapirs, great ground sloths and armored glyptodonts, many varieties of bisons and other bovines, the prong-horn (*Antilocapra*), peccaries (*Platygonus*), the great beaver-like rodents (*Castoroides*), at least two species of elephants (*Elephas imperator* and *E. columbi*), the American mastodon, great saber-toothed tigers, bears (*Arctotherium*), and amphicyonine dogs.

During the later glacial and interglacial epochs there was a gradual extinction or dispersion of nearly all of these older types, while the invasion of North America by European and Asiatic types continued. Among these later arrivals probably came many of the mammals found inhabiting this country at the time of its first exploration by historic man. Thus the later phases of the Pleistocene witnessed the first appearance in North America of such modern mammals as the musk-ox (*Ovibos*), the moose (*Alces*), the modern bison (*Bison bison*), the elk or wapiti (*Cervus*), the

caribou (*Rangifer*), the mountain sheep (*Ovis*), the mountain goat (*Oreamnos*), and the modern bears (*Ursus*). The northern mammoth (*Elephas primigenius*) seems also to have crossed into America about this time. It was probably with this later fauna that prehistoric man found his way across the land bridge from the Old World and established himself in America.

That there was a land connection between North America and the Old World at the beginning of the Pleistocene, there can be no doubt, and that it existed again as late as the close of the last glacial and probably well into the post-glacial epoch, is also reasonably certain. But as to the location of this land bridge—whether it connected North America with Europe by way of Greenland, or with Asia by way of Alaska, is not so definitely indicated by the fossil mammalian evidence. The question as to whether there ever had been a land connection between Europe and Greenland, or even that one existed during the early Pleistocene, does not enter here, as the problem before us concerns only the land connection that existed at the time man first appeared in America and over which he must have passed to reach this continent.

The character and distribution of the Pleistocene and recent faunas that found their way to America from the Old World point very definitely to an Alaska-Siberian land bridge as being by far the more probable route. The finding of the remains of the northern mammoth (*Elephas primigenius*) in such abundance along the Siberian coast, and distributed over Alaska and southward along the terminal border of the retreating ice sheet, as well as the presence of numerous remains of the horse, bison, musk-ox, caribou, moose, wolf, beaver, etc., found in the Pleistocene deposits of Alaska, very materially supports this theory. Good evidence is also furnished in the fact that, of the great number of European types of mammals represented in North America, the only authentic species yet found, common to the two continents, is the hairy mammoth (*Elephas primigenius*). This would indicate that the European genera which spread to America did not find a direct route permitting a sudden introduction of unchanged species, but rather that they found their way slowly across the great conti-

nent of Asia and thence into North America, the transit of European species occupying a sufficiently long time of accomplishment to allow a recognizable change of characters. Within the great continent of Asia there was probably also a common center of dispersion from which both Europe and North America derived many species of closely allied forms. At the close of the Pleistocene, therefore, the greater part of the fauna of North America was probably the result of dispersion from Europe through Asia, and directly from Asia to North America by way of the Alaska-Siberian land bridge.

The present distribution of the living mammals also strongly bears out this conclusion, for all the introduced North American species more closely resemble their relatives in the Asiatic provinces than they do those of Europe, while all the Old World genera having American representatives are either purely Asiatic types or if European also extend their present range across Siberia to the Bering strait. This is true not only of the large mammals, as the moose and reindeer, which range from northern Europe eastward across the whole of Siberia, and the elk, or wapiti, and mountain sheep, which are of Asiatic origin, but of such widely diversified forms as the beaver, the microtine rodents, the hare, the marten, the weasel, the otter, the wolverine, the wolf, the large brown bears, and probably the red fox. A strong argument for the comparatively recent existence of this northwest land bridge may be derived from the fact that the North American species of Old World origin still closely resemble their Eurasian relatives, those of either side of the Bering strait not differing from each other more than related species of adjacent provinces within either continent.

Regarding the probable prevailing physical conditions, at the close of the Pleistocene, that would have induced primitive man to cross such a land bridge as existed between Asia and Alaska, the mammalian evidence seems to show in a fairly conclusive way that the connecting strip was comparatively broad and vegetative, thus forming an inhabitable land route by means of which, either in pursuit of his favorite game, or through his natural instinct for travel and exploration, man might easily have found his way by

slow degrees across from Asia into North America and thence down the Pacific coast. Sufficient reasons for this conclusion are fairly obvious from a study of the foregoing statements regarding the successive invasions of North America during the Pleistocene by such a wide variety of forms. Few of these invading forms were strictly Arctic species. Most of them were forest living, or forest and plains species. Hence, while it might be possible for one or two species of the large and hardy boreal types to have reached America through having been driven across a barren waste or ice sheet, of considerable extent, by a long-continued storm or some other extraordinary means, a land connection of such a character would ordinarily prove almost as effective a barrier to a majority of the species that found their way across as a high mountain range or a strip of open sea. The great number and wide variety of forms of mammals that must have crossed this land bridge seem, therefore, to indicate that plant dispersion must have preceded that of the animals, which, in turn, preceded the coming of the first primitive man to America. The complete cutting off of the Arctic current and the consequent increased influence of the Japanese current is sufficient reason for supposing that the climate, at least along the coast route, was comparatively warm and equable.

Summary

The evidence of vertebrate paleontology, therefore, while it may not be altogether convincing, seems to indicate the following:

1. That man did not exist in North America at the beginning of the Pleistocene, although there was a land connection between Asia and North America at that time, permitting a free passage for large mammals.

2. That a similar land connection was again in existence at the close of the last glacial epoch, and probably continued up to comparatively recent times, as indicated by the close resemblance of related living mammal species on either side of the present Bering strait.

3. That the first authentic records of prehistoric man in America have been found in deposits that are not older than the last glacial

epoch, and probably of even later date, the inference being that man first found his way into North America at some time near the close of the existence of this last land bridge.

4. That this land bridge was broad and vegetative, and the climate presumably mild, at least along its southern coast border, making it habitable for man.

The Distribution of Animals and its Bearing on the Peopling of America

By Austin Hobart Clark

In considering the possible routes by which the human population, almost universally acknowledged to be of foreign origin, reached America, it is of importance to consider the evidence to be gathered from the study of the present distribution of animals, for, after all, men, though singularly specialized in regard to the brain, are but animals, subject to the same stimuli, to which they react, particularly when living in a primitive state of cultural development, in essentially the same way.

Among the so-called lower forms of life no two types agree in the details of their distribution, though the same general facts hold good for all. As a basis for discussion we should choose a group the component species of which are, from their habitat, the least subject to the influences of climatic change, as well as the least subject to the ravages of external and internal enemies and parasites; a group whose species, through the developmental history of the individuals, are the least likely to be carried by winds or currents, and subsist upon food of such a character that an adequate food supply is everywhere present and everywhere practically uniform in quantity and in quality; a group composed of forms stable enough to retain a specific, or at least a generic, entity under widely varying geographical conditions, as well as under slowly changing local conditions; and a group which possesses a reasonably complete paleontological record, yet includes few enough forms so that all of its constituent species may readily be borne in mind. But we must never lose sight of the fact that conclusions based upon the study of a single group of animals must always be tested in the light of data acquired from the study of other groups.

In the whole animal kingdom the one group which best meets the several requirements detailed above is that of the Crinoidea. The central East Indian region is the center of distribution of the present crinoid fauna of the world, and apparently was also the chief center of distribution of all the faunas of the later geological horizons.

The faunal conditions in the regions about Australia show that the Australian continent was once much larger than it is now, and included New Guinea and the Aru islands, though not the islands farther to the west and to the north. This old Australia gradually subsided, especially toward the northwestern and northeastern corners, restricting the land area to the dimensions of the Australia of today.

The southern part of Australia was once connected with southern South America, and it was by way of this land bridge that temperate South America received a large part of its present fauna.

From the faunal conditions in the Lesser Sunda islands we are led to assume a more or less complete, though not necessarily continuous, land connection between these Lesser Sunda islands, Madagascar and southeastern Africa, possibly including the Maldive islands and Ceylon. While among the terrestrial forms this connection is just as emphatically indicated, we find little or no trace of it in continental Africa, for the reason that Madagascar was very early cut off from Africa before the connection with Asia was established, this connection having resulted in admitting into Africa a fauna that very soon entirely changed the aspect of its original fauna, which we now find indicated in isolated colonies on Madagascar and on the Mascarene islands.

We are similarly led to suggest the existence, at a somewhat later date, of a great South Sea Island continent or at least of a great South Sea archipelago, of which New Zealand, the Marquesas and Hawaiian islands, and Japan indicate the eastern and northern boundaries, and the Lesser Sunda islands the southwestern, being connected with New Zealand in some way to the northward of New Guinea. It is possible that the Philippine islands, Borneo, and Celebes, as well as Java and Sumatra and the southern part of

Indo-China, formed the highest part of this South Sea Island land. This would account for the generalized nature of the present crinoid fauna of these localities, the component species of which practically all exhibit primitive characters, as a comparatively recent introduction into an area recently submerged. This fauna cannot be satisfactorily resolved into any distinct constituent elements; yet it is singularly heterogeneous and diversified; hence it appears to indicate not only an area of submergence but also a region of constant and comparatively sudden geological changes, which have constantly rejuvenated the fauna and throughout the region have prevented the crystallization of the various forms into fixed and definite faunal types.

Along the western coasts of South and North America, from the Straits of Magellan to the Aleutian islands and thence down the coast of Kamchatka and the Kurile islands to Japan, the fauna is quite uniform. This fauna presents a number of peculiarities; in its northern part all of the component species, while near the mean of their respective genera, are exceedingly variable, and present all the characters shown by species introduced into a new country. We may therefore assume that the fauna has reached this portion of its range within comparatively recent centuries. In the Okhotsk sea, about the eastern and southern coast of Sakhalin, and thence down the west coast of the Sea of Japan as far as Korea, we find an arctic fauna similar to that of the seas from western Greenland and Nova Scotia to the Kara sea, though entirely disconnected from it. A trace of this fauna also is found just east of the Commander islands, dividing the typical Magellanic fauna of the region.

The Magellanic fauna scarcely intrudes into the Bering sea beyond the Aleutian islands, and is not known in Kamchatka except along the southern coast Thus we assume from the data at hand a very broad connection within comparatively recent epochs between northwestern America and northeastern Asia, extending at least as far south as the Aleutian and Commander islands, and probably taking in on the north Wrangel island and the New Siberian islands. Such a land, washed by the warm currents from the southward, would have an equable temperate climate, something like that of Puget sound.

This Magellanic fauna is cut in two by a southerly extension of the arctic fauna, which has spread as far southward as the Sea of Japan. This is a fact of the greatest significance. The breaking through of the broad Asiatic-American land connection by a strait leading to the Arctic ocean would permit of the southern extension of a cold current from that ocean. That such a cold current from the Arctic ocean actually existed is indicated by the arctic species in the seas of Okhotsk and Japan and east of the Commander islands; moreover, this Arctic-Pacific connection must have been of considerable depth, for one of the species groups that has intruded into the Pacific does not occur above 743 fathoms and is otherwise confined to the colder stagnant bottoms of the Arctic. It seems probable that, once a current cuts through a land, the strait formed is very rapidly deepened to the limit of the action of the current; thus the considerable depth of the channel between the Commander and western Aleutian islands does not necessarily indicate any great age; at any rate it must have been carved out since the extension of the Magellanic fauna to the region, as this fauna occurs on either side of it, but could not ever have passed through it. As the northern portion of the Magellanic fauna is the youngest fauna known to us it is evident that the intrusion of the Arctic types into the Pacific across this part of the Magellanic fauna must have been a very recent occurrence.

The entry of this cold current into the Pacific across the Bering Sea region must have had a most powerful effect upon the fauna and flora of the lands on either side of it. As a result these lands became much colder and the fauna, especially the terrestrial, was forced to fall back to regions unaffected by its influence so that similar forms occurred on both coasts of the Pacific in widely separated localities far to the southward of their original habitat.

More recently there appears to have been a rising and a filling in of the region about Bering strait, especially toward the Alaskan side, by ice- and water-borne material, by which the effect of the Arctic current has been lessened, so that Kamchatka and the Commander islands have again become capable of supporting a more or less temperate fauna and flora which, however, are not

derived from the remnants of the original fauna and flora but are entirely new introductions from the southward that have driven the arctic fauna and flora northward before them. This accounts for the difference in the fauna and flora of corresponding parts of Asia and America in the Bering Sea region; in America we find abundant traces of the old Bering Strait fauna and flora, but in Asia these have been largely submerged by recently developed types, which have spread northward from more southern regions.

We have good circumstantial evidence that man existed long before the Bering straits were broken through, though not that he existed in this region. We know that in Europe man was contemporaneous with the mammoth, for we find bones with figures of the mammoth rudely drawn upon them. Thus we may suppose that man was also contemporaneous with the mammoth in Asia. Now the submergence by which the Bering sea was carried below the surface also cut off a large island from northern Siberia. As the subsidence continued, this island became gradually smaller and the mammoths upon it therefore became crowded into a smaller and smaller area, where at last they all died. The enormous numbers of mammoth skeletons on the New Siberian islands (now one of the chief sources of ivory) can be interpreted only as the result of the separation of these islands as a very large island from the mainland and the gradual restriction of this land mass in size until it reached its present dimensions. This possibly took place after eastern Asia was inhabited. But to join the New Siberian islands to Siberia the general surface of the land would have to be raised sufficiently to bring most of the bed of the Bering sea above water; therefore we are reasonably safe in assuming that the land connection across the Bering sea was in existence after man could have inhabited the region. The extinction of the mammoth in Asia was probably due to the breaking through of the cold arctic current, by which the climate was made too severe for such a specialized type. It could not migrate to the southward because of the deserts and the mountains in that direction and, deprived of a large part of its food supply by the dying away of the rich subtemperate flora, it perished entirely. All of the more specialized animal types, like man, the

higher apes, and all large mammals, live under the most delicate ecological adjustment and are singularly sensitive to any environmental change. Let the ecological factors under which they live be modified ever so little, and they disappear.

The highlands of Central and South America and the West Indies were once joined with south-central Africa and Madagascar; but the disruption of this land bridge, which was possibly contemporaneous and continuous with that from Africa to the Lesser Sunda islands, occurred before the intrusion of predacious mammals, or indeed of any of the larger mammals, into Africa from Asia.

In the Indian and Pacific oceans we thus find indicated:

1. An Indian Ocean land, including southeastern Africa and Madagascar and extending thence to Ceylon and the Lesser Sunda islands from Sumbava to Timor, and probably more or less connected with Australia. Very early this became cut up, disintegrated, and almost totally disappeared.

2. Subsequent to this (as is indicated by more numerous and more specialized diagnostic species) a South Sea Island land or gigantic archipelago, the boundaries of which are delimited by Formosa, southern Japan, the Hawaiian and Marquesas islands, New Zealand, New Caledonia, the Solomon islands, New Britain, the Moluccas, and the Lesser Sunda islands. Possibly the Philippines, Celebes, Borneo, Java and Sumatra, and the Malay peninsula also formed part of this territory. This also subsided many ages ago, the subsidence beginning and being most marked in the eastern part, and becoming broken up into small islands, which in many cases have succeeded in remaining above the sea through the building up of volcanic chimneys as they went down, or by building up coral chimneys on the crests of their mountains, or by both processes combined.

3. Possibly contemporaneous with this last, though quite separate from it, an Australian continent including Australia, New Guinea, and the Aru islands. This has also subsided, especially in the northern part where a broad sea, the Arafura sea, now covers a large area which was once land.

4. A land, possibly a northward extension of the Antarctic con-

tinent, connecting Australia and southern South America. Certain features of the culture of the Patagonians and Fuegians have been interpreted as indicating an affinity with the natives of Australia, but on biological grounds the possibility of human migration from Australia into Fuegia is very remote.

5. A very broad land with an equable temperate climate connecting Asia and America, at a time long subsequent to the above-mentioned lands.

In the Atlantic ocean we find indicated:

1. A land including the highlands of Central and South America and extending to south-central Africa and Magadascar; this probably became broken up at the same time that the land connectng Madagascar with the Lesser Sunda islands disappeared; it was possibly a western extension of the same land mass.

Summary

According to the evidence of biological paleogeography, man probably reached America over the broad land that formerly existed across Bering sea, and since he reached America this land connection became disrupted and the whole region acquired an Arctic climate.

A few accidental visitors may have wandered across the Pacific from the South Sea islands; but this could have been only after the perfection of the art of navigation by these people, and America was probably settled long before navigation or boat building had reached any advanced stage. It is unlikely that any number of people ever came across the Pacific because of the enormous distance to be traversed with both wind and current against them. Such visitors as might have come by this route can be considered only as purely accidental; their survival on arrival is very doubtful, for primitive men, like the anthropoid apes, are singularly sensitive to any change in their environment. To be worthy of serious consideration any migration route by which primitive men may be supposed to have entered a country must be shown to possess the possibility of very gradual acclimatization and very gradual adjustment to the new conditions. The difference between the conditions in the South Sea islands and on the western coast of South America

would in itself seem to be a conclusive argument against the settlement of America by that route.

There is no evidence that man could have come from Africa by the Afro-Antillean land bridge; probably Africa itself was uninhabited by man at the time that this bridge was disrupted.[1]

Bearing of Archeological Evidence on the Place of Origin and on the Question of the Unity or Plurality of the American Race

By William H Holmes

The problem of the origin of the American race as such may be quite a distinct problem from that of the origin of the human race, that is to say, of the genus *Homo*, since, if the racial elements going to make up the population of the New World were decidedly diverse —as partly Mongolian, partly Malayan, and partly European— the place of amalgamation would be the place of origin, and that place would be America. Indeed, it seems self-evident that an American race, howsoever evolved and constituted, must have its place of origin on American soil, since, if formed elsewhere, it would not be American, save by adoption.

The problem is somewhat complicated by the possibility that the human group may have had its origin within the land area now embodied in the continent called America, in which case since we agree on the question of primary racial unity—the Old World races must appear in the light of offshoots of an American stock, but the proposition that the American continent nurtured the human stem is not well sustained by the evidence so far adduced; besides it is incredible that the American race, represented today by hardly more than ten million people of homogeneous physical type and primitive culture, should have peopled the Old World with three races highly differentiated in physical type and in cultural achievement and comprising the bulk of the world's population. With regard to this question, the consensus of opinion among students of the subject favors the view that the Old World gave birth to the human kind. Traces of human occupancy are found in the Old World associated

[1] The evidence afforded by the study of recent marine organisms indicates that this land bridge was disrupted during the Cretaceous.

with geological formations that may be safely assigned to the close of the Tertiary period, and it is incumbent on those who hold to the theory of American origin to establish an earlier occupancy of the New World. Two regions only in America have furnished testimony worthy of serious consideration in this respect—California and Argentina. The testimony in both of these cases is striking and picturesque, giving American man a place in the far Eocene, and is supported with much enthusiasm by a few students who are ready to stake their scientific reputations on the outcome. Recent investigations relating to North American as well as South American early man show that the testimony, if it is to stand, must have much additional support.

In view of these conditions, the theory of an autochthonous origin of the American race may be set aside, and the problem of the arrival in the New World of racial elements originating in the Old World need alone receive consideration.

Archeology can supply but meager evidence of the early arrival of migrating peoples. Relics of human handiwork have been reported from the glacial deposits, which are post-Tertiary, but they are few and far between, and even if properly authenticated, they can tell no story of racial origins; they are not labeled. We may learn from such evidence that man was present at a definite geological period and that his culture was primitive, but we get no clue as to his race or to the direction from which he came. The evidence furnished by osseous human remains is negative as to both great antiquity and unity or diversity. In two cases crania presenting characteristics quite distinct from those of the known aborigines have been brought to the attention of anthropologists—the low-browed skulls from the bluffs of the Missouri, which Dr Hrdlička has shown to correspond to skulls of members of recent tribes; and two crania equally remarkable and un-Indian in type obtained from the glacial gravels at Trenton, which Dr Hrdlička has shown to be of peculiar German or Dutch type.[1] Possibly they belong to Hessian hirelings killed in the battle of Trenton.

The archeologist, in pursuing the inquiry regarding racial origins

[1] Hrdlička, Aleš, *Bull. 33, Bureau of American Ethnology.*

for America, must then turn to the great body of antiquities that are generally recognized as belonging to the Indian tribes and their ancestors. Like the race itself, these remains form a comparatively homogeneous unit, being confined practically to the stone phase of culture. It is observed that this body of material does not seem to contain any element or trace of pre-Columbian European influence back to the beginning of our civilization. The Indian tribes were without Old World beasts of burden and without wheeled vehicles, or sail-rigged craft, the great modern agencies of transportation; they had no cattle, sheep, or goats, potent factors in the development of Old World sedentary life; they had no knowledge of iron or the smelting of ores, essentials in the development of the civilized state; no keystone arch, a requirement of successful building; no glaze or wheel in the potter's art; no phonetic alphabet, the stepping-stone from barbarism to civilization. We conclude from these facts that America had no important contact with the cultured peoples of the Old World before the sailing of Columbus. What, then, can archeology show that has a significant bearing on the arrival of trans-oceanic peoples in such numbers as seriously to affect the make-up of the American race?

Omitting for the present any consideration of the open gateway from Asia to America at the far northwest, through which we all believe the chief currents of population came, let us examine such evidence as may be available of arrivals through other avenues of approach. As the continents stand today, and with primitive means of migration, there seems small chance of the arrival of wayfarers in any considerable numbers on the American shores, and the evidence of such arrivals must be far to seek and difficult of evaluation. A primitive boat's crew reaching the western continent as voluntary voyagers or as wayfarers brought unwillingly by the winds and currents, even if hospitably received by the resident population, would leave no physical trace of their presence that would last beyond a few generations, and the culture they happened to represent might not find even a temporary foothold. Yet germs of culture have sometimes wonderful potentialities, and a very simple device, technical suggestion, or tenet of belief might catch

the primitive fancy, engraft itself upon the native culture, and in a very short period of time influence the whole current of its development. The question is, however, one of race and not of culture, and the presence in America of numerous culture elements coming from trans-Atlantic sources, even if plainly manifest, might mean very little with respect to racial make-up.

We may now inquire into the nature of the archeologic evidence which might seem to warrant the conclusion that foreigners had arrived even in numbers sufficient to plant a few germs of culture; but first it is necessary that we exclude from the body of material to be considered all handiwork that bears the taint of post-Columbian influence since modern Europeans reached American shores. We have to consider also—lest we misinterpret the evidence—the similarities, analogies, and identities between the culture achievements of peoples quite foreign to one another historically and genetically that arise and must arise from the like constitution everywhere of the human body, the human mind, and human environment. It is not wise to throw evidence of this class entirely overboard, for it may possess value of very different degrees—the similarities ranging from the merest fortuitous resemblances to correspondences so close and intimate that actual intercourse may be safely inferred. The nature of such evidence may be briefly considered.

The student examining certain collections of primitive antiquities discovers that a particular form of chipped flint knife-blade occurs in America and also in the Old World, and explains the occurrence by the oft-observed fact that with given state of culture, given needs, and given materials, men of all races reach kindred results. When, however, he observes that the blade of the knife in each case is hooked at the end, keen and highly specialized, he wonders how such correspondence could occur. Pressing his investigation further, he discovers on the two continents other knife blades of chipped flint with curved and keen point and identical specialization to facilitate hafting, and a further identical elaboration for purposes of embellishment, and he begins to inquire whether the people concerned in the making of these two groups of artifacts are not related or have not

in some way come in close contact. His interest is intensified when he observes that the groups of closely identical blades occur in two trans-oceanic areas at points of nearest approach, and also not in any case at more remote localities on the respective continents, and he is astonished to discover further that the two areas involved are connected by oceanic currents and trade winds by means of which seagoing craft could make the ocean voyage from continent to continent with comparative ease. Later he finds that other objects of handicraft belonging to these adjacent areas have similar correspondences, and his previous impressions are decidedly strengthened. When going more deeply into the investigation, he learns that similar phenomena occur elsewhere, that in numerous localities on the shores of the one continent the culture traces have close similarities to those of the adjacent trans-oceanic areas, and no such resemblances elsewhere, and he concludes without hesitation, and concludes safely, that contact of peoples and transfer of trans-oceanic cultures have taken place not only at one but at many points.

Now, this is a purely suppositional case, but it is suggestive and justifies us in pursuing further in this direction the interesting problems of American origins. I may call attention to certain noteworthy analogies that do occur between American and foreign archeological remains. In New England and farther north we find a highly specialized form of the stone adze usually known as the gouge, which is abundant in the region mentioned, but fades out gradually as we pass to the south and west, with rare outliers in the Carolinas, the Ohio valley, and the western Lake region, but not appearing elsewhere on the continent. It does appear, however, in northern Europe where the Atlantic is narrowest and most fully bridged by intervening islands. Within the same region in northeast America, and thinning out as does the gouge to the south and west, is an object of rare and highly specialized form, an ax-like implement, known as the bannerstone, with perforation for hafting and extremely varied wing-like blades. It is not found elsewhere in America. In northern Europe we find a drilled ax of similar shape. It is a noteworthy fact that this implement in the Old World was probably a thing of use, while in America its functions were sacred and

ceremonial. It may be worth while to suggest the possibility that in prehistoric, pre-Ericsson times the germ of this type of implement found its way across the intervening seas, and that, being regarded with veneration, it became a symbol of exceptional regard.

On the Atlantic shores of America, in the West Indies, and in Brazil there are certain forms of implements and pottery that resemble more closely the corresponding fabrications of the Mediterranean shores than do those of other parts of America. In the Isthmian region we find works in gold and silver and their alloys that excite wonder since they display skill of an exceptional, even remarkable, kind, and the methods employed, as well as the forms produced, suggest strongly the wonderful metal craft of Nigerian tribes of old Benin. And we observe that the trade winds and currents of the Atlantic are ever ready to carry voyagers from the African shore in the direction of the Caribbean sea.

Even more remarkable and diversified are the correspondences between the architectural remains of Yucatan and those of Cambodia and Java in the Far East. In both regions the chief structures of the cities are pyramids ascended by four steep stairways of stone, bordered by serpent balustrades and surmounted by temples which employ the offset arch and have sanctuaries, altar tablets, and glyphic inscriptions. The walls are embellished with a profusion of carved and modeled ornaments and surmounted by roof crests of elaborate design. There are present also, as supports for the great stone tables and the lintels of the doorways, dwarfish Atlantean figures duplicating those of the antipodal cities. Some of the figures represent whiskered men. The significance of all this has been sought again and again without satisfactory result, and I shall not here venture to present an explanation.

On the Pacific side of the American continent strange culture coincidences occur in like degree, seeming to indicate that the broad Pacific has not proved a complete bar to the intercourse of peoples of the opposing continents. It has been often remarked that the faces of modeled and sculptured figures in southern Mexico have a Mongolian cast and that the eyes are decidedly oblique. The stone adzes and pestles of the northwest coast resemble the adzes

and pestles of the Pacific islands more closely than they do the corresponding tools of the eastern shores of America, and the peculiar flat-bodied stone club or *mere* of the Samoan and other islands is distributed along the Pacific coast and scattered sparsely over the adjacent regions to the east. Passing over other instances that might be cited, we find that we have completed the circle of the continent and are approaching, as has often been done before in the study of these problems, the main gateway to the continent at Bering strait, about which enough has already been said during this discussion. Through this gateway at one period or another the main currents of incoming people have passed, but the time may have been long and the racial elements diversified, so that the actual place of origin of the American race as such would be the place on the American continent where these elements were remodeled into a new people.

The question of the unity or plurality of the American race is thus a question simply of the unity or plurality of the elements embodied in its make-up. If the cradle of the human race was in the Old World, the American race would consist of such elements as happened to find their way to the uninhabited continent; if in very early times the elements might be derived from some paleo-Asiatic or other early race not now in evidence; if later, they might be one or more of the known races of the cradle continent; if more than one, there would be plurality of racial elements in the American composition; if only one, the condition known as unity would prevail.

I agree fully with Dr Hrdlička that Asiatic peoples must have furnished the great body of immigrants to America, but it seems to me also highly probable, considering the nature of the archeological evidence, that the Western World has not been always and wholly beyond the reach of members of the white, Polynesian, and perhaps even the black races.

Some Ethnological Aspects of the Problem

By Alice C. Fletcher

Looking at the tribes that dwell on this continent, and particularly in North America, one notes many and important ethnological and psychological resemblances. To give a few of the more striking examples, we see that the idea of duality is generally expressed in their social organization, not that each tribe is divided into two parts or sections but that the various kinship groups composing a tribe are apt to be so combined as to express a recognition of the apparently dual natural forces, represented by Day and Night, Summer and Winter, Sky and Earth. This duality concept sometimes takes on an anthropomorphic form and the forces are regarded as male and female, or, they are reflected in social conditions, and represented as War and Peace. The two parts always stand for dissimilar but complementary forces or powers.

Not only in the tribal organization does this duality concept appear, but it is to be found reflected in many of the religious ceremonials of the people. It is to the latter that one must turn for the more direct expression of "religious ideas." It may safely be stated that among the American race what may be termed "religious ideas" are fundamental to all ceremonials and upon them is built the tribal organization.

These "religious ideas," briefly stated, are founded upon the native conception of the cosmos. In this conception man views all things from his own personality and from this standpoint predicates his relationship to animate and inanimate nature.

Conscious within himself of an ability to move and to bring to pass, he regards motion, whether of body or of mind, as a universal ability and as the simplest and most fundamental manifestation of a mysterious, indwelling power that has brought all things into existence and is the cause of all movement; of the winds, the clouds, the storm, the rivers, the growth of vegetable forms, the activities of animals, and the physical and mental life of man. There is no visible thing within which this mysterious power does not dwell and that is not made active or stable by it. To man, this mysterious

power is invisible and only knowable indirectly through its manifestations in nature and living forms. Since all things (for nothing to the Indian is strictly inanimate), including man, derive life and motion from this mysterious power, all things are regarded as, in a sense, related to each other, because of the mysterious power that pervades and sustains all natural forms.

Such a view makes possible a psychical as well as a physical connection between the Indian and all natural objects and renders conceivable the belief that there may be a possible action and reaction between the various natural and animal forms and man.

This conception of man's relation to nature and to the mysterious power that animates and pervades all forms finds expression in a rite that is nearly if not quite universally observed among the natives of our continent, namely, the rite in which man seeks to appeal to this mysterious power through the chanting of prescribed rituals during a lonely vigil and fast, in the hope that he will receive in a vision the sight of some form that can impart to the suppliant added strength and ability for achievement. The apparition seen in a vision is generally of some beast or bird, although other forms sometimes appear. Now, it is noteworthy that, so far as known, the animal forms so seen, and those that are represented in the various tribal ceremonials, or serve as designations of kinship groups, all belong to the fauna of the recent geologic age. No survival of an extinct species has as yet been discovered to have a part in any rites among the different tribes.

Mythical and symbolic creatures have part in some ceremonials, but they are clearly the creations of man's fancy, formed by him to express certain of his ideas, and they never had any real existence.

While appeals by man to an invisible power through fasting and prayer are not uncommon in other parts of the world, yet, the rite so generally practiced in America, by the youth at maturity, or by the man who seeks to lead, or to obtain magical powers, shows such similarity as to suggest a past unity or derivation from a common source ancient and traditional; here and there this rite is augmented by tribal or ceremonial peculiarities, but fundamentally it remains the same.

It seems not improbable that this widespread rite has been a factor in the development of one of the characteristics of the American race, that is, a mental seriousness. This seriousness is present in all the Indian's practices, whether they savor of rank shamanism or belong to social or ceremonial procedures replete with geniality, united movement, and song.

From these and numerous other facts it seems safe to conclude that the Indian shows throughout a considerable resemblance in his fundamental subjective and objective conceptions. His mentality is distinctly of one type, and on the whole may be regarded as well advanced in scale. These conditions lead the ethnologist to the belief that the Indian represents one branch or a part of one branch of humanity, and a branch that in mental development is now, and probably was when it reached this continent, much above what must have been the more primitive forms of man.

Some Ethnological Aspects of the Problem

By Walter Hough

The general interest in the early peopling of America has been long sustained, and many branches of science have contributed in the effort to elucidate the problems connected therewith. Ethnologists have endeavored mainly to trace the culture affinities with other regions, especially with the contiguous regions of Asia and America, and much success has rewarded their studies. For a number of years I have been interested in noticing similarities in arts of wider scope geographically, and have compared the arts of tropical America with those of Malaysia, the latter area being now quite thoroughly represented in the National Museum through the immense collections of Dr W. L. Abbott.

The question of acculturation is beset with great difficulties, which render a clean-cut determination of the transmittal of arts and inventions from one people to another only rarely possible. The lacunæ in our knowledge are in some degree responsible, since the migrations of inventions proceed by obscure paths and are almost never recorded by history; in effect, the modern ethnologic min-

glings are on a par with those of prehistoric times, which, although fascinating, leave us often breathless after a long and fruitless chase and receptive to theories of independent invention as the other horn of the dilemma.

It is an axiom of science that one should err on the side of excessive caution in the effort to get at the facts of similarities of invention, and no other subject of anthropology has produced so many harebrained experiences.

It is evident that the transfer of arts has been common in sub-arctic Asia and America and some of these arts have wide connections. A few of these may be discussed.

Drill.—The most specialized form of fire-making and boring apparatus, the four-part drill, which exists in America among the Eskimo and some Canadian Indians, is found in eastern Asia, India, and Borneo, as well as in Europe. The pump-drill has a wider distribution in America, Europe, and Asia, but is not found in Africa. The flint and pyrites strike-a-light is distributed in Europe, where it occurred in Neolithic times, and in far northern America.

The simple two-stick fire-drill has a world-wide distribution, and is the only form common to America. In Borneo, however, the diversity of methods points to a composite formed by waves of population.

Armor.—Plate armor like that of Japan and Korea, and the horn armor of Mindanao and other East Indian islands, have been observed on both sides of Bering strait, the most perfect type made of plates of ivory occurring among the Eskimo. Among the North Pacific Indians, armor made of plates of wood occurs, to the southward combinations of rods and plates of wood, and in California rods alone are employed. This grouping of methods appears from the literature to have been repeated in part in eastern United States, having a distribution, so far as we have data, into Mexico and Central America, but apparently not into South America.

Lamp.—The lamp is extra-American, belonging with simple saucer lamps of Asia and Europe. The Eskimo lamp, however, is a substitute for the stove and fireplace of other peoples and is

unique in the development of the wide-stretched wick line, as well as in its occurrence in the Western Hemisphere. The lamp here has been molded in the hands of the Eskimo, who are the most ingenious aborigines in the world, and whose very existence depended on this homely utensil.

I have omitted a large series of similarities between America and southern Asia, which may or may not indicate relationship but which are inconclusive and subject more or less to explanation as independent or environmental inventions. Among these are the skirt dress, rain coat, palm industries, ear and lip plugs, head compression, teeth inlay, simple fire-drill, calumet, spoon censer, nose flute, lapped edge baskets, and others.

There seem, however, to be inventions having a greater significance which have come into America and there taken a wider range than those just mentioned. These are as follows:

Blowguns.—The distribution of the blowgun appears to follow the Asia-America route and has its greatest use in the two extremes, Malaysia and South America. It must be acknowledged that between Malaysia and eastern North America there is a wide gap, which up to the present cannot be filled, except that survivals, as a child's toy, may indicate connection. The distribution in America begins with the Iroquois, extends to the Gulf, appears again in Mexico and Central America, and becomes widespread in tropical South America. The blowgun has not been found in Africa, nor in any other portions of the world except in those just mentioned. It does not depend upon the presence of natural tubes such as those furnished by the bamboo, cane, and other grasses. It is made in both extremes of its range of two strips of wood grooved and joined with cement and wrappings of bark, as may be seen in the specimens of the Jakuns of the Malay peninsula and those of the tribes of the upper Amazon. In Borneo since the introduction of iron the boring is made in solid wood by means of a bar of that metal. The dart of the Asiatic blowgun is often tipped with poison and terminates at the other end with a core of pith, while in America the darts are often poisoned and usually terminate with a wrapping of the down of some plant. The blow-

gun does not seem to be a likely subject of independent invention, on account of the complexity of its conception and the difficulty of its manufacture.

Sling-bow.—In connection with the blowgun in Asia and America the sling-bow, which appears alone at the two extremes, is interesting. So far as known, the sling-bow occurs only in the valley of the Amazon and in Malaysia. It consists of a bow with a double bowstring and has a small pouch in the middle to carry the clay pellet. No particular conclusions can be drawn as to the presence of the sling- or pellet-bow in both areas, since if there ever were any intermediate steps, they have been lost. It is only the fact that the blowgun and pellet-bow appear together in both areas that would justify the belief that the two inventions had a common origin.

Bark Beaters.—Still another invention, that of the grooved bark beater, of almost world-wide diffusion, has found its way into America; by what route or by what means it is difficult to say. This implement consists of a round or square short club, whose surface is covered with parallel flutings. This invention has arisen in the areas of certain tropical trees, whose matted bark can be expanded more readily by a grooved club. The most familiar product of this character is the tapa of the Polynesian island, or the coarse red cloth of equatorial Africa. The use of this grooved club perhaps was the basis of all primitive paper-making. Irrespective of the question of independent inventions, the easiest route by which this method could have reached America would have been from southern Asia, where this method is practiced. It appears in America in British Columbia and Washington, where it is used on bark of a fissile texture. There are no observed traces of this implement between this area and Mexico, a lacuna which might well occur, provided the clubs were of perishable wood. In Mexico the survivals are of grooved stones to which the author had the honor of first calling attention in 1892. In Mexico this implement is used again on felted or matted fiber bark. From this region the implement is increasingly common into tropical America and from southern Mexico to the Amazon the

decoration of bark cloth in colors assumes the appearance of the art in Polynesia and the East Indies.

These matters are presented with all due reservations and not with the effort to sustain or promulgate any theory concerning the origin and diffusion of these inventions. They may be only a few resemblances amidst a vast host of divergences. On the whole, however, the appearance of these inventions in America has substantiation in the results given by Dr Hrdlička, that the peoples of America most resemble those of eastern Asia, and even if the migration of inventions does not involve the migration of peoples, it tends to show a contiguity of thoughts and preferences.

The Bearing of Astronomy on the Subject

By Stansbury Hagar

The study of the astronomy of the American Indians does not afford any definite evidence of their unity or diversity, or of the period or place of their origin. It neither proves nor disproves their origin in America or in Asia or in any other region. But it does present facts of value bearing upon the development of their culture, of relations between the peoples of America, and of their relations with the races of other continents in the prehistoric period of America.

Astronomy is not a primitive science. Long periods of years indeed must have elapsed before the really primitive man began even to observe the stars with anything less than utter ignorance and indifference, for they were related in no manner that he could apprehend with those material needs to which his attention was practically confined. Primitive astronomy began with the systematic observation of the stars to indicate direction upon night journeys, to indicate the hunting seasons to the hunter, and later to indicate the sowing and reaping seasons to the farmer. The cosmic and the religious element of astronomy—the question as to the nature of the stars and their relation to the nature and life of man and of the cosmos—form, no doubt, one of the earliest bases of religious thought, if not the earliest, but such speculations, when they pass beyond mere wonder, surely imply a higher culture than

the practical uses of stellar observation, and therefore cannot be earlier in time. It is evident, then, that the evolution of man must antedate the beginning of astronomy by a very long period of time. Even if we could trace astronomy back to its earliest source in time and place it would afford us little or no information upon the origin of the earliest man, unless, indeed, he had remained in one spot during the whole of the long intervening period—a manifest absurdity.

Applying the above deductions to the American Indian, if he originated in America, astronomy cannot say when or where. We seem to see several foci of astronomical development, in Peru, Mexico, and Yucatan, corresponding with general culture centers in regions having a climate and topography peculiarly favorable to the advancement of culture. The astronomical lore of all these regions is too nearly identical in complex concepts to be satisfactorily explained as due to similarities of race and of environment. There must have been an interchange of ideas between them either directly or through intervening nations in pre-Columbian times, hence we cannot be certain that this lore is indigenous to any one of the three regions named. Evidence of extensive migrations and of extensive change of climate in comparatively recent times adds to the uncertainty upon this point and prevents us from determining, at least in the present state of our knowledge, even the region of the earliest astronomical development in America.

If the American Indian migrated into America from another continent in primitive times, astronomy would still be helpless to aid us in the search for the time and place of such migration because it cannot reach back to such an early period. But if this migration took place in later times or after the development of astronomical traditions, then indeed we may find in this field concepts sufficiently complex to render it possible for us to trace them back towards their birthplace. It is evident, however, that these concepts bear upon the origin of the American race only if they can be shown to be associated with the earliest race known to have existed on this continent—otherwise they will pertain merely to a later influx of an alien race into an already populated region. Pursuing this

inquiry, then, let us ask first whether the concepts of American astronomy present such analogies with the astronomical concepts of other continents as to indicate intercommunication between them.

In the field of scientific astronomy the pole star was generally known throughout North America as the pivot of the sky, and the position of the South Pole was noted by the Peruvians. At least four of the planets were known and distinguished from the fixed stars by the Peruvians, Mexicans, Mayas, and some of the other tribes. The Peruvians had observed the sun spots and a few among them were perhaps acquainted with the true cause of solar and lunar eclipses. All three peoples had divided the sky into true constellations and possessed a true solar zodiac. The Mexicans had ascertained the period of the apparent revolutions of the planets with remarkable accuracy. But nothing in these facts implies any foreign influence. The lunar and solar calendars of these three advanced nations from the standpoint of the writer's cursory study of them present little more evidence of intercommunication so far as their time periods are concerned, though the system of successive years governed by successive zodiacal signs recently discovered by Boll in Egypt and the Orient certainly suggests certain features of the Maya and Mexican calendars. The presence in Peru, Mexico, and various other parts of America of the Pleiades year of two seasons, divided by seed time and harvest, with its associated myths and rituals presents a stronger argument for intercommunication, one that has been elaborated by the late Robert Grant Haliburton, and Mrs Zelia Nuttall has published evidence in favor of intercommunication based upon cosmogony and concepts which she believes to have been associated with the celestial North Pole.

When we enter the field of symbolic and traditional astronomy the evidence of intercommunication increases. We find among the common concepts the division of the cosmos among the four so-called elements, fire, earth, air, and water, the use of the swastika to express celestial revolution, of the cross and circle to represent the fourfold division of the sky and earth, of the serpent and egg with certain astronomical associations. Among the extra-zodiacal constellations the Bear, formed by some of the stars of our Great

Bear, has been generally recognized by the tribes of the northeastern portion of North America, probably from prehistoric times. It may be a legacy from the Northmen. The Milky Way as the Path of Souls of the northern tribes and the Celestial River farther south likewise finds European and Oriental analogies. But from the writer's standpoint the crux of the argument for intercommunication rests upon the symbols associated with the zodiac in Peru, Mexico, and Yucatan, for here we are considering not isolated analogies but an interrelated series in which the element of sequence affords an impressive guaranty against both chance and imaginative manipulation.

In Mexico the study of the elaborate system of judicial astrology may yield interesting results. So far as the writer is aware, little or no attention has yet been paid to this subject. In Peru evidence as to the zodiac is derived from the Star Chart of Salcamayhua, which names and pictures the signs, the monthly ritual which reproduces the attributes of the sign through which the sun is passing when the festival is held, and the celestial plan of the sacred city of Cuzco, which was supposed to reproduce the observed design of the sky including the signs. This plan in varying aspects seems to have been typical of several and perhaps of many of the sacred cities or theogonic centers that form such a characteristic feature of American civilization. In Mexico the signs are named and pictured by Duran, Sahagun, Tezozomoc, in the Codices, and on the mural paintings of Mitla; their attributes are described in the monthly ritual and embodied in the plan of Teotihuacan and in the day signs. In Yucatan the signs appear in the Codices, the ritual, the day signs, and the plan of Izamal.

As to possible European influence in these sources, the writer can only state his conviction that an examination of them will convince the student that such influence is either insignificant or totally absent.[1] The following table will briefly indicate the correspondence between some of the concepts associated with the American zodiacal signs and with the signs we have received from the

[1] See the writer's various papers in the Reports of the International Congress of Americanists.

prehistoric Orient. It should be understood, however, that this table refers to only a few of the more obvious analogies:

SIGN	ENGLISH	PERUVIAN	MEXICAN	MAYA
Aries	Ram	Llama	Flayer	
Taurus	Bull (Originally Stag)	Stag	Stag or Deer	Stag
Gemini	Twins	Man and Woman	Twins	Two Generals
Cancer	Crab	Cuttlefish	Cuttlefish	Cuttlefish
Leo	Lion	Puma	Ocelot	Ocelot
Virgo	Virgin (Mother Goddess of Cereals)	Maize Mother	Maize Mother	Maize Mother
Libra	Scales (Originally part of Scorpio)	Forks	Scorpion	Scorpion
Scorpio	Scorpion	Mummy	Scorpion	Scorpion
Sagittarius	Bowman	Arrows or Spears	Hunter and War God	Hunter and War God
Capricornus	Sea Goat	Beard	Bearded God	
Aquarius	Water Pourer	Water	Water	Water
Pisces	Fishes (and Knot)	Knot	Twisted Reeds	

Granting that these sequential analogies, if verified, establish intercontinental communication, we must now ask whether, if these concepts were brought into America from abroad, they seem to be associated with the earliest migration to this continent. We shall have to seek light on this point outside the field of astronomy. Professor Edward S. Morse and others have called attention to the significance of the facts that wheat was unknown in America at the time of its discovery by Columbus and that maize was then unknown outside of America; moreover, that there is little if any similarity between the more complex artifacts of America and of

other continents. It is practically certain that the cultivation of these cereals and the manufacture of the higher grades of artifacts must have preceded the creation of a zodiac, and its transmission around the world, and it is not reasonable to suppose that a migrating race having knowledge of either cereal or of artifacts would have carried with them the knowledge of the zodiac without that of their food and tools. The inference is obvious. The knowledge of the zodiac was not brought to or taken from America by the earliest inhabitants of another continent, but must have been transmitted in later times.

We must still explain how such knowledge could have been transmitted in later times without the cereals and artifacts. There seems to be but one consistent answer. The transmission was accomplished by accidental or sporadic communication with individuals of an alien race who were able to impart their mental concepts but who brought with them few or no material products. There was no general migration at this time. Let the reader suppose himself unexpectedly thrown by shipwreck among a people with whom his race has never before communicated. Grant him a few companions only, and imagine the result. How much of their civilization would they be able to impart? Probably only a few ideas. They had no cereals and their attempts to introduce their artifacts eventually failed to overcome the force of conservative habit and custom opposed to change. This is admittedly theoretical, but it seems to be the only theory which reconciles the otherwise inconsistent facts. But if this explanation is correct we see that even if the American Indian is a migrant from another continent astronomy cannot help us to say when or whence he came, because as soon as we find astronomical concepts of sufficient complexity to afford a possible means of tracing them back to an alien home they imply an advancement in culture inconsistent with the known characteristics of early American peoples, and therefore they cannot have come here with them. Astronomy reveals that there has been intercommunication with America in probably late prehistoric times, but it is silent as to what has taken place at an earlier stage.

The Bearing of Ocean Currents on the Problem

By Paul Bartsch

I have been very much interested in all that has been said about the origin of the North American Indian, and particularly in the remarks of Mr Holmes, who showed that the archeological features on the American continent indicate a possible multiple contact, and there occurs to me a line of thought that seems, so far, not to have been expressed by any of the speakers, namely, the ocean highways along which primitive man or his handiwork may have reached our shores from other places. Most of the evidence brought forth in the meeting seems to call for a land bridge across Bering sea, which Dr Dall showed has not existed during the time that man is known to have been on the globe. There is, however, the strong North Pacific current, which sweeps the eastern shores of Asia and is deflected eastward so as to strike the American coast about Sitka, Alaska, where a part is deflected northward over the Aleutian islands, while another part turns south and sweeps the coast of Washington, Oregon, and California, before it is again deflected seaward.

Farther south we have the Equatorial counter-current, which sweeps most of the Pacific islands and finally touches our coast in the region of Guatemala, being deflected northward along the American shores into the Gulf of California. It is quite possible that the similarity in certain ethnologic features of the East Asiatic islands and Central America may be due to a common origin which may have been in the East Asiatic islands and may have come to our shores over this route.

The west coast of South America is swept by the Peruvian current, which comes from the south coast of Australia past New Zealand to our shores.

Looking at the great ocean currents of the Atlantic, we find that we have the North Equatorial current, which is in part a continuation of our Gulf Stream, flowing past the South European coasts over West Africa where it is deflected westward, to the American shores, which it strikes in the West Indian region, whence it is deflected northward as the Gulf Stream along our seaboard (at

some little distance off shore). After leaving our shores, off New Foundland, it touches the east coast of Iceland; then passes to Europe, where a part is deflected over the British Isles and the coast of Norway; while the rest turns southward as before stated.

In the South Atlantic we have what is known as the Benguela current which sweeps the southwest coast of Africa, striking the Gulf of Guinea, from which it is deflected westward to the American shores as the South Equatorial current. This stream, upon striking the eastern point of Brazil, splits, half being deflected southward as the Brazilian current over South America; the other half northward, where it mingles with the waters of the Equatorial current to form the Gulf Stream.

It would seem, therefore, that we might expect (even after America was peopled) to find northeast Asiatic cultural elements and even man drifting to our northwest shores; Polynesian and Melanesian to Central America; Australian and New Zealandic to the west coast of South America; Southwest African to South America and the West Indies, and even eastern North America; and South European and West African to the West Indies and eastern North America.

The Problem from the Standpoint of Linguistics

By Alexander F. Chamberlain

The appearance of Part I of the *Handbook of American Indian Languages*,[1] edited by Dr Franz Boas and published by the Bureau of American Ethnology, containing, as it does, authoritative sketches of Athapascan (Hupa), Tlingit, Haida, Tsimshian, Kwakiutl, Chinook, Maidu, Algonquian (Fox), Siouan (Dakota), and Eskimo, by such approved investigators as Boas, Swanton, Goddard, Dixon, Thalbitzer, Jones, and Michelson, makes possible a new and saner method of comparative philology with regard to the numerous languages of the American Indians past and present. The illuminating Introduction to this volume, by Dr Boas, should be read by everyone who seeks either to know something about the Indian

[1] *Handbook of American Indian Languages*, by Franz Boas. Part I. (Smithson. Inst., Bur. Amer. Ethnol., Bull. 40.) Washington, 1911, pp. vi, 1069.

languages as such or to investigate the question of their possible relationship with forms of speech in other regions of the globe. What has been done here for North America will be done some time also for Central and South America, so that, before a student ventures to compare the languages of primitive America with those of Asia or elsewhere, he will know a large number of facts concerning their lexical, their morphological, their grammatical, and their syntactical characteristics and peculiarities, and so will be able to determine whether the resemblances observed are merely accidental, or justify the assumption of real linguistic kinship.

The older method of comparing indiscriminately and arbitrarily the vocabularies and word-lists alone of the mass of American Indian languages with those of the mass of Asiatic tongues is now hopelessly out of court for scientific purposes, though still to be met with in certain quarters, where "pseudo-ethnology" reigns supreme. The wholesale methods of a Professor Campbell, a Hyde Clarke, etc., have borne no legitimate fruit, and could bear none. Nor has anything really valuable or conclusive come from such speculations as those of Trombetti, Täuber, and others concerning the "original speech" of man, and its *disjecta membra*, which are now to be picked up here and there all over the world among the languages of all peoples, living and dead. In such studies, the facts concerning the individual development of a language here in America, its morphological and grammatical structure, as brought out by careful analysis and long-continued research, are ignored, or at least not made use of at all, and a few seeming word-identities permitted to settle a matter of fundamental significance in the history of human speech, or the development of the various types of human languages.

Another method, perhaps quite as old, was to select some one Asiatic and some one American Indian language, on the basis of a few alleged identities (again almost entirely of a lexical character, or embodied in a single morphological character, etc.), and prove that the New World tongue must necessarily have been derived from the Old World one. A familiar instance of this procedure is the comparison of the Mandan (a Siouan dialect) with Welsh, something that has not yet entirely disappeared from more or less

popular books about the Indian. It is to be found, too, in Catlin, who had not a little to say about the "Welsh Indians." Father Petitot saw Celtic elements in certain Algonquian dialects, and in 1883 read before the Association Française pour l'Avancement des Sciences a paper on the *Parallèle entre la famille caraïbo-esquimaude et les anciens Phéniciens*. Others have sought to connect the Caribs with the ancient Egyptians, etc. The Otomi language of Mexico was singled out for comparison with Chinese as early as 1835 by C. Náxera, whose Latin essay, *De Lingua Othomitorum Dissertatio*, was published at Philadelphia. Náxera has been followed by a number of ethnologists, including, as late as 1884, the French Americanist, Dr Hamy. The "isolating and monosyllabic character," ascribed to the Otomi, making it "stand separate and apart from all other American Indian languages," has been the basis of such conclusions. But Brinton in 1885, and others since, notably F. Belmar[1] in his discussion of the alleged monosyllabism of the Otomi family of speech, have destroyed the foundation for affiliation with Chinese. The Otomi and related tongues contain a majority of dissyllables, some monosyllables, and some polysyllables. The American character of these languages is fully established, and they cannot be derived from or affiliated directly or indirectly with Chinese.

The languages of the ancient Mexicans, Mayas, Peruvians, etc., probably on account of the fact that civilization was more highly developed among them than elsewhere in primitive America, have been often subject to comparison with Old World tongues, sometimes in ways even more unjustifiable than the attempt to parallel Otomi and Chinese. Mendoza[2] sought to prove that Nahuatl, the speech of the ancient Mexicans, was an Aryan language and a daughter of Sanskrit. Later, this theory of Aryan origin has been exploited by T. S. Denison, whose book[3] appeared in 1908; it treats of the

[1] Sistema silábico en las lenguas de la familia mixteco-zapoteca-otomí. *Anales del Museo Nac. de Arqueol.*, Mexico, tomo II, 1910–1911, pp. 261–271. See also H. de Charencey in *Intern. Amer.-Kongr.*, 14te Tag., Stuttgart, 1904 [1906], p. 168.

[2] *Anales del Museo Nacional de México*, Tomo I.

[3] *The Primitive Aryans of America*, Chicago, 1908, pp. 189. See also this author's *Nauatl or Mexican in Aryan Phonology*, Chicago, 1907, pp. 24; and *A Mexican-Aryan Comparative Vocabulary*, Chicago, 1909, pp. 110.

origin of the Aztecs and kindred tribes, "showing their relationship to the Indo-Iranian and the place of the Nauatl or Mexican in the Aryan group of languages." The author does not hesitate to say that "the Mexican language is Aryan in vocabulary and in verb conjugation" (p. 9); "Mexican occupies an intermediate position between Sanskrit and Old Persian." Of course, no real evidence of such origin and relationship is forthcoming, although almost anything might be proved if one compares "cal*poll*i, tribe, with cosmo*poli*tan, its cognate," and treats "roots" after the fashion of Mr Denison. Needless to say, nothing concerning the origin of American Indian languages can be learned through such a method, which, unfortunately, will continue for some time to engage the attention even of men somewhat expert in linguistics, though not scientifically-minded enough to see the proper relation of things. Attempts to connect the Mayan tongues of Yucatan, Guatemala, etc., with languages of the Old World have failed even more conspicuously.

Paravey, in 1835, compared Chibchan, or Muyscan, of Colombia with Japanese, in a *Mémoire sur l'origine Japonaise, Arabe et Basque de la civilisation des peuples du plateau de Bogotá*, basing his work on the publications of Humboldt and Seybold, and reaching impossible conclusions.

The Quechua and Aymará languages of Peru and Bolivia, of all the South American linguistic stocks, have been most subject to theories of Old World derivation. Their supposed kinship has run all the way from Sumerian[1] to plain Aryan. E. Villamil de Rada, in his *La Lengua de Adán y el Hombre de Tiahuanaco* (La Paz, 1888, pp. 249), even argues that Aymará was the language of the Garden of Eden, another candidate for which ancient service is North American Algonquian, as maintained by A. Berloin in his *La Parole Humaine* (Paris, 1908).[2] V. F. Lopez's *Les races aryennes du Pérou* (Paris, 1871) and Ellis's *Peruvia Scythica* (London, 1875) have had their followers and imitators down to the present day. Others

[1] See S. A. Lafone-Quevedo, *Supuesta derivación sumero-asiria de las lenguas Kechua y Aymará*, Buenos Aires, 1911, pp. 11.

[2] See *American Anthropologist*, 1909, N. S., XI, pp. 123–124.

have sought to make out Semitic affinities with Quechua or Aymará or both. But all efforts to affiliate these South American tongues with Old World languages have had no scientific results, as might have been expected from the first.

The Polynesian-American comparison has been a favorite field for many linguistic explorers before and since the appearance of Lang's *Polynesian Origins* in 1860, where the *rapprochement* of vocabularies was made much of. The alleged Polynesian derivation of American Indian languages was discussed by the late Horatio Hale in a paper read before the Congrès International des Américanistes at Berlin, in 1888,[1] and the conclusion reached that "no traces of affiliation between the languages of America and those of Polynesia have thus far been discovered." It is certain also that none have been discovered since. Nevertheless, in a paper read before the Congrès International des Américanistes at Buenos Aires in 1910, Sr Anibal Echeverría i Reyes ventured the assertion that "the language of Easter Island has undoubted resemblances with the Cunza tongue, spoken in the desert of Atacama." But the *rapprochement* of the Polynesian dialect of Easter Island with Atacameñan has no more foundation than had that of Otomi with Chinese, Nahuatl with Sanskrit, or Quechua-Aymará with Aryan. It is rather surprising, however, to find an ethnologist like C. Hill-Tout[2] keeping to the old order of things and making, in the year 1911, a statement like the following: "Comparing the Salish language with such characteristic American tongues as the Algonquin or Dené, the affinities between these are infinitely less and more remote than those between Salish and the Oceanic tongues; and even if these resemblances should be shown to be fortuitous, and without real foundation, they are so remarkable that the classification of the Salish tongue would still be rather 'Oceanic' than 'American.'" Proof for such belief is lacking, and the Salishan can be safely assigned to the American Indian languages, like the Otomi, the Nahuatl, and others which various

[1] *Was America Peopled from Polynesia? A Study in Comparative Philology*, Berlin, 1890 (reprint), pp. 15.

[2] *J. Roy. Anthrop. Inst.*, Lond., 1911, vol. XLI, p. 134.

writers have sought to detach from the list of aboriginal linguistic stocks native to the New World.

Summing up the evidence on this question, it may be said with certainty, so far as all data hitherto presented are concerned, that no satisfactory proof whatever has been put forward to induce us to believe that any single American Indian tongue or any group of tongues has been derived from any Old World form of speech now existing or known to have existed in the past. In whatever way the multiplicity of American Indian languages and dialects may have arisen, one can be reasonably sure that the differentiation and divergence have developed here in America, and are in no sense due to the occasional intrusion of Old World tongues individually or *en masse*. It may be said here that the American languages are younger than the American Indians, and that, while the latter may have reached the New World in very remote times via Bering strait, the former show no evidence of either recent or remote Asiatic (still less European) *provenance*. There is thus absolutely no satisfactory evidence, from a linguistic standpoint, of the ultimate Asiatic derivation of the American aborigines; nor is there any of such a character as to argue seriously against such a view, which seems, on the whole, both reasonable and probable. Certain real relationships between the American Indians and the peoples of northeastern Asia, known as "Paleo-Asiatics," have, however, been revealed as a result of the extensive investigations of the Jesup North Pacific Expedition, which have been concerned with the somatology, ethnology, mythology, folk-lore, linguistics, etc., of the peoples on both sides of the Pacific, from Columbia river to Bering Strait and from the Amur to the extreme point of northeastern Asia. The monographs containing the scientific results of the Jesup Expedition are still in course of publication. The ones most significant for American-Asiatic relations are those of Sternberg on the tribes of the Amur, Jochelson on the Koryak and the Yukaghir, and Bogoras on the Chukchee and the Siberian Eskimo. The general conclusion to be drawn from the evidence disclosed by the Jesup Expedition is that the so-called "Paleo-Asiatic" peoples of northeastern Asia, *i. e.*, the Chukchee, Koryak, Kamchadale,

Gilyak, Yukaghir, etc., really belong physically and culturally with the aborigines of northwestern America; and they probably reached the parts of Asia they now inhabit (or once inhabited, for some of them had formerly a larger area of distribution) from America at a time more recent than the original peopling of the New World from Asia by way of Bering strait. Like the modern Asiatic Eskimo, they represent a reflux from America to Asia and not *vice versa*. In brief, these peoples may be said to be "modified Americans." It is the opinion of good authorities also that the "Paleo-Asiatic" peoples belong linguistically with the American Indians rather than with the other tribes and stocks of northern or southern Asia.[1] Here we have, then, the only real relationship of a linguistic character that has ever been convincingly argued between tongues of the New World and tongues of the Old. The special resemblances of the Gilyak with the American Indian languages, from a morphological point of view, has been treated by Sternberg, in a paper read before the Congrès International des Américanistes at Stuttgart in 1904.[2] In his sketch of the grammar of the Yukaghir, Jochelson[3] points out a number of respects in which that language also resembles the American Indian rather than the Ural-Altaic tongues of the Asiatic continent. And finally, Dr Franz Boas, in his article on "Ethnological Problems in Canada,"[4] makes this statement: "A consideration of the distribution, and the characteristics of languages and human types in America and Asia, have led me to formulate the theory that the so-called Paleo-Asiatic tribes of Siberia must be considered as an offshoot of the American race, which may have migrated back to the Old World after the retreat of the Arctic glaciers."

The verdict of linguistics on the question of the origin of

[1] See F. Boas, Ethnological Problems in Canada, *J. Roy. Anthr. Inst.*, Lond., 1910, vol. XL, pp. 529–539. Also his other discussions of the results of the Jesup Expedition.

[2] Bemerkungen über Beziehungen zwischen der Morphologie der giljakischen und amerikanischen Sprachen. *Intern. Amerik.-Kongr. Vierzehnte Tagung.* Stuttgart, 1904. (Stuttgart, 1906), pp. 137–140.

[3] Essay on the Grammar of the Yukaghir Language. *Ann. N. Y. Acad. Sci.*, 1905, vol. XVI, pt. II, pp. 97–154. See pp. 138–140.

[4] *J. Roy. Anthr. Inst.*, 1911, vol. XL, p. 534.

the American Indians is, therefore, that the cause of the multiplicity of stocks and languages present in the New World must be sought in the New World itself, and not by a theory of intermixture with Asiatic tribes or peoples derived from any other quarter of the globe since the permanent settlement of the land by the early ancestors of the Indians, who themselves reached America from the Old World, probably via Bering strait (though, linguistically, there is no final argument barring the peopling of America from ancient Europe), at a rather remote period. The American languages, as has already been noted, are younger than the American Indians, and have evolved in the New World without any relationship with the tongues of the Old World being probable or even possible (the peopling of Polynesia, *e. g.*, occurred too late to have influenced the linguistics of primitive America). The only proved connections between the Old World and the New World in the matter of languages are the American-Asiatic relationships demonstrated to have existed in northwestern North America and northeastern Asia. Here the net result seems to be that we must include the "Paleo-Asiatic" peoples and their languages as "American", or at least "Americanoid". Their emigration from America into Asia is, however, recent as compared with the original advent of man in the New World.

Mythology

By Roland B. Dixon

In any consideration of the question of the evidence afforded by mythology in respect to the "unity and probable place of origin of the American Indian," it is necessary to distinguish carefully between race and culture. If by race we are to understand a group based on physical characteristics and descent, then mythology is a most uncertain reed upon which to lean, for, as is now generally recognized, physical type and culture are in no way necessarily related. Mythology can thus by itself afford little evidence in regard to the racial unity or origin of the American Indian. If, on the other hand, it be a question of culture, mythology can and doubtless will supply evidence of great value in tracing the cultural

origins of the peoples of America. At the present time, however, the available material for a thorough study of American mythology leaves much to be desired. For considerable portions of North America, to be sure, the collections of myths are fairly full and representative, but there still remain large areas, particularly in Mexico and in the north, in regard to which the information is very scanty. For South America it may be said that hardly a beginning has been made, and for a large part of the continent no material at all is available.

On the basis of the evidence at hand, however, tentative conclusions may be drawn. Considered in some detail as to subject matter, the mythology north of Mexico shows that a number of areas may be distinguished within each of which a more or less distinctive group of myths is found. These areas coincide roughly, as might indeed be expected, with the main general culture areas, such as the Northwest Coast, the Plains, the Southwest, etc. The limits of these myth areas, however, are generally much less clearly marked than in the case of the general culture areas, and very commonly certain myths or myth-incidents have a distribution far wider, some extending, indeed, almost from ocean to ocean, or from the Arctic to the Gulf. In many cases the distribution of the myth-incidents can be shown to have followed trade or migration lines, and their wide dispersal can in this way be accounted for.

If, instead of considering the substance of the myths, their general character is taken as the basis, a much wider grouping appears, and such contrasts as that between the Eskimo (with their matter-of-factness and paucity of animal tales) and the great bulk of all the tribes to the southward become apparent. Similar more general groups are such as those possessing or not possessing the migration type of myth, or those in which the distinction between the mythical age and that which follows is or is not sharply marked, etc. In such a more general aspect, the mythology of Mexico and Central America is contrasted with that to the north, owing to the prevalence in the former region of Messiah-like myths—a type that extends, indeed, farther south along the western shore of South America.

Even from this wider point of view, then, it would appear that there are several more or less well-marked types of mythology occurring in America. In spite of these distinctions, however, there is nevertheless a certain similarity in character that runs through them all, such that they may be said, for instance as compared with African mythology, to present a general unity. Indeed, in the more detailed consideration of the substance of the myths themselves, it appears that some few incidents are to be found which are common both to South and North America. So far, then, as the present material goes, a general similarity in type may be said to exist in American mythology, although within this broad uniformity a number of contrasted groups appear.

In its relations to the mythologies of other areas, the most important associations are to be found with northeastern Asia. Here the degree of similarity is most striking, the myths of northeastern Asia and of northwestern America forming practically one great group, the members of which are allied not by form alone, but by actual content of the myths themselves. Except for this area, no clear evidence of relationship has been shown.

This Asiatic relationship must not, however, be regarded as furnishing evidence relating to the origin of the American Indian. It indicates a cultural relationship only, and far from pointing to an Asiatic source for the culture even, the bulk of the evidence would favor the theory that the similarity shown in the mythologies is the result of influences passing from America to Asia, and not in the reverse direction. Such cultural influence, moreover, belongs to a stage in culture far above that which must have been possessed by the ancestors of the present Indian at the time when they first came to America and belongs to a period far more recent than that at which the peopling of the American continent must have taken place.

SOME PROBLEMS IN THE ETHNOLOGY OF THE CROW AND VILLAGE INDIANS

By ROBERT H. LOWIE

IN the course of several summers' work among the Crow and the Village Indians of the upper Missouri, under the auspices of the American Museum of Natural History, a number of interesting problems have developed, some of which may prove of general interest.

The first point to which I should like to call attention is the possible influence of the Caddoan tribes in the development of Northwestern Plains culture. Students of the Omaha have recently informed us that the earth-lodges, and probably also the Medicine Pipe ceremony, of that tribe owe their origin to the Arikara.[1] It does not seem unreasonable to suppose that the earth-lodge of the Mandan and Hidatsa may have resulted from contact with the same member of the Caddoan family. As for the Medicine Pipe ceremony, the Crows, who share this performance with their kinsmen to the east, trace its introduction to the Hidatsa, while the latter positively assert that they themselves obtained it from the Arikara. In addition we have Maximilian's statement that the Hot dance of the Ruhptare Mandan and of the Hidatsa had been purchased of the Arikara.[2] Here, to be sure, we must exercise some caution. The Hot dance described by the Prince comprised two spectacular features—a sort of fire-walk, and the plunging of the performers' arms into hot water. The latter has been described in connection with the Dakota *heyoka* organization;[3] while the fire-dance was

[1] Fletcher and LaFlesche, The Omaha Tribe, *27th Annual Report of the Bureau of American Ethnology*, p. 112.

[2] Maximilian Prinz zu Wied, *Reise in das innere Nord-America in den Jahren 1832 bis 1834* (Coblenz, 1841), II, p. 144.

[3] J. O. Dorsey, A Study of Siouan Cults, *11th Annual Report of the Bureau of Ethnology*, p. 469.

performed by the Arapaho,[1] Gros Ventres,[2] Cheyenne,[3] and, according to the present writer's informants in the field, by the Santee. Accordingly, it would not be justifiable to conclude that, because the Mandan and Hidatsa obtained *their* Hot dance from the Arikara, the latter must have originated the performance in question.

A consideration of the older literature on the Arikara—especially of Maximilian's and Brackenridge's notes, and of Clark's data in *The Indian Sign Language*—might lead to the question whether the Arikara are to be credited with the development of the age-class system that characterizes Mandan and Hidatsa military societies. However, a series of interviews with one of the best Arikara informants now living has convinced me that that system did not exist among his people, though, singly considered, the military organizations of the Arikara reveal some analogies with the corresponding societies of neighboring tribes. So far, then, as this group of societies is concerned, the influence of the Arikara, if exerted at all, must have been confined to single societies or ceremonial details.

On the other hand, the esoteric societies of the Arikara may have had a deep influence on the secret medicine-bundle ("shrine") fraternities of the Mandan and Hidatsa. Unfortunately, we have very little information on this phase of culture for any of the tribes concerned, so that the foregoing remark must be taken solely as hinting at a possibility. In point of mythology and folklore we are in a somewhat better position, for there is a fair collection of Arikara traditions by G. A. Dorsey, and the much fuller body of Pawnee mythology brought together by this writer would enable us to determine with some accuracy the distinctively Caddoan elements. But we should have to secure much more of the folklore of the two neighboring tribes before pronouncing on the mutual influence of the Mandan, Hidatsa, and Arikara, or indeed on that exerted by the Mandan and Hidatsa upon each other.

[1] Kroeber, The Arapaho, *Bulletin of the American Museum of Natural History*, XVIII, p. 190.

[2] *Id.*, Ethnology of the Gros Ventre, *Anthropological Papers of the American Museum of Natural History*, I, p. 190.

[3] Mooney, The Cheyenne, *Memoirs of the American Anthropological Association*, I, p. 415.

The second question I should like to discuss is of wider import. There can be no doubt that the Hidatsa and the Crows have sprung from the same stock. This conclusion is, of course, not based on a separation myth, though common to both tribes, but on linguistic considerations. Though the two languages are not mutually intelligible,[1] their relationship is very close indeed and points to a relatively recent separation. From this it might be supposed that there is also a close cultural relationship, but this assumption is not borne out by the facts. Without harping on the obvious difference in material culture between the nomadic tipi-dwelling Crows and the agricultural Hidatsa living in earth-lodges, we cannot fail to be impressed with the differences in social and religious organization.

In social organization, to be sure, there is one significant trait shared by both tribes: both are divided into exogamous nicknamed clans with maternal descent. Here, however, the similarity ends. The seven Hidatsa clans are assembled in two moieties—the Three-Clans and the Four-Clans. Whether these larger units were also at one time exogamous, I found it impossible to determine to my satisfaction. The number of Crow clans is variously set at from thirteen to twenty-four. By most informants these clans are linked together so as to form six larger units, of which the exogamy is again doubtful. Now, there is not a single clan in the Crow list that corresponds in name to any one of the Hidatsa list. The fact that both tribes employ the nickname system for their clans is of no special significance in this connection, since that system occurs in a number of other Plains tribes.

The differences become still clearer when we turn from social to religious and ceremonial organizations. Among the Hidatsa there were military organizations graded by age, with entrance into any one of them dependent on purchase. Among the Crows the corresponding societies were all coordinate, and the element of purchase was wholly absent. The Hidatsa permanently delegated police power to a single age-society; the Crow societies took turns at

[1] The majority of the older Hidatsa understand and speak Crow because they have come in contact with Crow Indians; those Hidatsa that have not met with the Crows are able to understand only fragments of Crow conversation.

policing the camp. Of course, the societies, considered singly, have many details in common, but these are also shared by other tribes of the Plains area. The divergent evolution of the Crows and Hidatsa is noticeable even in two societies peculiar to them—the Lumpwood and the Stone Hammer societies. Nothing is more characteristic of the Lumpwood society of the Crows than its rivalry with the Kit Fox society in war exploits and the annual attempts of its members to steal their rivals' wives. These features did not exist among the Hidatsa. On the other hand, the Hidatsa Stone Hammers had the privilege of entering any lodge at night and stealing what food they could get, while no such liberty was granted to their namesakes among the Crows.

None of the societies dealt with in the preceding paragraph can be regarded as having an essentially religious character, but both tribes had in addition a number of sacred organizations. Whether the series of Hidatsa women's societies—patterned in point of purchase and grading on the men's age-societies—should be classed under this heading, is doubtful. At all events, there is nothing at all parallel among the Crows. Medicine-bundle fraternities, with membership of each probably confined to certain definite families, are very conspicuous among the Hidatsa, but are also lacking among the Crows. The Medicine Pipe ceremony, as already noted, is shared by both tribes, but its occurrence among the Crows seems to be due to quite recent contact rather than to common possession before the time of separation. In either case, it is completely overshadowed, among the Crows, by the series of societies privileged to plant and harvest the sacred tobacco. Entrance into these societies, by far the most sacred and prominent in the tribe, is by a formal adoption involving heavy expense. Though individual Hidatsa secured Crow tobacco bags, it is probable that no Tobacco society existed among the Hidatsa, and certain that if such an organization did exist it played a very subordinate part in ceremonial life. Finally, there are considerable differences between the forms of the Sun dance. These would probably become still clearer if the Hidatsa ceremony were better known. With the Hidatsa the Sun dance was the performance of a medicine-bundle fraternity. Among the

Crows it was conducted by the individual owner of a doll bundle. The Hidatsa lodge was of the Arapaho-Blackfoot type, while that of the Crows was tipi-shaped. A Crow erected the lodge exclusively to secure a vision that should enable him to wreak vengeance on a tribe that had slain his brother, or some other close relative. This highly specialized point of view seems to have been absent from the mind of the Hidatsa pledger.

Of course, it would be strange if there were absolutely no cultural traces of the former relationship between Hidatsa and Crow. Even with our limited knowledge of Hidatsa customs it is possible to list some interesting points in common. Thus, the tribes coincide in the definition of the joking relationship, which obtains between *sons* of fellow-clansmen,[1] and in the modes of license permitted to the jokers. Dr Rivers has recently expressed the opinion that it is the social structure that constitutes the most stable element of culture. An examination of Crow and Hidatsa institutions leads to the query whether it is the large framework of social life, or not more frequently the minor social usage, such as the joking relationship, that is least likely to undergo change.

The quite recent history of several tribes I have visited seems to point in this direction. Among the Assiniboin it is no longer possible to get a clear insight into their former band (or clan?) system; but the parent-in-law taboo persists to the present day. In 1906 the Lemhi Shoshoni had lost most of their ancient life, but the custom of the menstrual hut was in full force. That social usages of the type mentioned may serve as sign-posts of a foreign cultural type is indicated by the absence of the mother-in-law taboo among the Arikara in spite of its presence among the Hidatsa and Mandan. As noted above, the influence of the Arikara on the neighboring tribes may have been considerable, and acculturation has certainly taken place in many directions; yet in this inconspicuous detail of everyday intercourse there is a sharp line of demarcation. Accordingly, it is obvious that the ethnologist must pay close attention to these minor social customs and must gather all related data. For example, in the case of so widespread a thing as the mother-in-law

[1] As stated before, descent is matrilineal.

taboo, it is necessary to inquire whether there are specific peculiarities—whether it is possible to disregard the rule after presenting the mother-in-law with a scalp, whether the words constituting her name are tabooed, whether the taboo disappears with the wife's death, and so forth. It is precisely such details that may help most in tracing historical connections. Whether, however, this holds generally or not, there can be no doubt that it holds for the two tribes compared. The Hidatsa and the Crows do not resemble each other in the conspicuous facts of either material, or social, or religious culture; they do resemble each other in certain minor traits that might be easily overlooked.

A third problem of some importance relates to the social organization of the Crows and Hidatsa. As already explained, these tribes have exogamous clans with maternal descent. The Mandan system, as given by Mr Curtis,[1] resembles that of the Hidatsa, but, as that author himself observes, it is possible that the information nowadays secured on this subject is unduly colored by Hidatsa influence. In practically all other Siouan tribes—certainly in all that could have influenced the Crow-Hidatsa sub-family in recent times—descent was traced through the father. Some Old World ethnologists might be tempted to suppose that the Crows and Hidatsa, like the Biloxi and Tutelo, have preserved a primeval condition of female descent, while all the other members of the Siouan stock have progressed to patrilineal descent. However, there is probably no American ethnologist that would seriously discuss such an hypothesis. It would be more to the purpose to cast about for some geographically contiguous tribe of alien stock from which the feature in question might have been derived. Here, however, we are doomed to disappointment. Of the Western Algonkin, the Arapaho had no clans or gentes; the Gros Ventres had gentes with paternal descent; while among the Blackfoot the preponderance of evidence is to the effect that their bands were non-exogamous as such, and that descent was reckoned in the father's line. The nature of the Cheyenne camp-circle division is a matter of dispute, but a direct influence from this tribe seems highly improbable.

[1] *The North American Indian*, vol. v, p. 145.

We are thus reduced to the Caddoan group: it might be supposed that the Arikara introduced the institution of maternal descent among their new neighbors of the upper Missouri. However, we find that neither the Skidi Pawnee nor the Arikara had anything like the Hidatsa system. The Arikara had no exogamous groups, and band membership was inherited in the male line;[1] and the Skidi had an endogamous village grouping with male descent.[2] We may conclude that the system of exogamous groups with matrilineal descent is a Crow-Hidatsa peculiarity. At the same time we must remember that the resemblance between the social organization of these two tribes is limited to this one rather general feature. Indeed, the common possession of this single feature gains significance only through its absence in other tribes.

An unsolved problem in the sociology of the Crows and Hidatsa is the function of the larger social units in which the clans are grouped. As stated above, I could get no evidence to show that the Four-Clan and Three-Clan divisions of the Hidatsa were exogamous. Among the Crows the testimony of different informants proved contradictory, some asserting that marriage was quite proper within one of the larger divisions provided there was no violation of the clan-exogamy rule, while others stated that the clan-groups were as exogamous as the single clans. It seems doubtful whether the question can be satisfactorily settled for the Hidatsa at this late day, but among the Crows an objective study of all the marriages that have taken place between middle-aged people now living, together with those of their parents, may shed light on the exogamous or non-exogamous character of these groups. The fact that the larger groups have no names is significant, but cannot be considered as more than presumptive evidence against the hypothesis of exogamy.

Finally, a few words may be devoted to the problem of the age and military societies. The questions connected with this subject are partly of a psychological and partly of an historical

[1] Curtis, loc. cit., pp. 61, 149.

[2] G. A. Dorsey, Social Organization of the Skidi Pawnee, *Congrès International des Américanistes*, XV^e^ session, II, p. 70.

character. Psychologically, the principal point of interest is whether the ostensible gradation by age that has been found among the Mandan and Hidatsa is really at bottom a classification by age. For reasons stated at length several years ago[1] I regarded this as improbable even before visiting the tribes. Recent investigation in the field shows that the age grading is a by-product of the mode of purchase. The subjective attitude of the natives is that a man holds membership in every society that he has ever bought and has never sold. Thus a man of ninety may still belong to—or rather own membership in—a society purchased at twenty. In other words, the fundamental correlation is not between age and membership in a certain organization, but between purchase and membership. The age element enters through the custom that all age-mates purchased a society at the same time, which custom naturally leads to a more and more refined classification by age as the number of purchasable societies increases.

Another question is, whether the age societies of the tribes mentioned, as well as the ungraded societies of their neighbors, should be considered as religious organizations. For the Crows, this question must be unhesitatingly answered in the negative. The military organizations of the Crows were, apart from their military character, essentially social associations similar to four organizations of the present day, which join in the performance of the Grass dance on certain occasions and otherwise have the functions of clubs and mutual benefit brotherhoods. The Hidatsa and Mandan age societies had a number of religious traits; several of the regalia seem to have been invested with a sacred character, and there is a considerable proportion of origin myths based on supernatural revelation. Nevertheless—and this also applies to the corresponding ungraded societies of the Arikara—there is a very clear distinction between the attitude of these Indians toward all of the aforementioned organizations and their attitude toward the really esoteric medicine-bundle organizations. The most conservative natives willingly discuss the military societies, while only the christianized

[1] The Assiniboine, *Anthropological Papers of the American Museum of Natural History*, IV, pp. 75–98.

Indians consent to speak of the more sacred organizations of the second class. Essentially, then, none of the military societies can be viewed as a full-fledged religious association.

The age grading of the Hidatsa and Mandan women's societies rests on the same principle as that of the men. Two of them, the Goose Women and the Buffalo Women societies, are of a rather more religious character than any in the men's series, and had for their function the insurance of a sufficient supply of corn and buffalo respectively. Schurtz's conjecture that the Arikara also had women's societies is confirmed by an informant, the organizations bearing the names of the Goose and the River Snake.

The historical questions that develop from a study of this subject are numerous, and cannot be readily solved except in principle. As I have shown in the paper referred to above, the question how and where the *system* of grading and purchase originated must be considered apart from the development and spread of ceremonial activity or regalia, and must also be treated as distinct from the question of the tribal functions of societies. For a satisfactory investigation of these historical questions it is necessary to consider the societies of all the Plains tribes. Then we discover that any one society is best characterized as a complex of features that are not necessarily connected in that particular way. Certain functions, such as police activity, and certain emblems, such as a stick wrapped with otter skin, are very widely diffused over the area, but they may appear in rather different combinations. Thus, the police functions may either devolve, not on any society, but on gentes, as among the Osage; or they may be associated in turn with all of the military societies, as among the Crows; or they may be vested in one particular society, as among the Mandan and Hidatsa. Similarly, a stick wrapped with otter skin occurs in the Mandan Soldier society, the Crow Kit-Fox organization, and various societies of other tribes. When, therefore, we find among the Mandan a society that has two otter-skin sticks and at the same time exercises police authority, we shall not regard this as proof that there is a necessary connection between these two features, but merely as a secondary association. Of course we must guard against the error

of supposing that all traits that are logically distinct must also have been historically distinct at one time. For example, no logical reason can be given why the bearing of an otter-skin stick should be connected with the duty of not retreating from the enemy; but since these two *logical* elements are, as a matter of fact, always joined, we may reasonably assume that their union is historically primary.

The course of development, however, has certainly been in large measure the result of secondary association. The fundamental fact is the tendency throughout the area toward forming societies of some sort, and the development of the several tribal systems of coordinating or subordinating the societies within any one tribe. Secondly, we have the very extensive occurrence of borrowing and its effect on the character of the established systems and their constituent societies. When a definite system has been established, there is a tendency to fit every society into it, even regardless of its function and ceremonial character. Thus, among the Arapaho the fifth and sixth societies bear no resemblance to the lower organizations of the same series. Similarly, the lower members of the women's series among the Hidatsa and Mandan seem to bear no relation to the Goose and Buffalo societies except for the mode of purchase and the fact that each has its relative grading. That such societies are linked together may be regarded as a case of secondary association even if we suppose that the single societies all originated among the same people. The clearest illustrations of this process, however, occur where we have demonstration of borrowing. Thus, a comparison of the systems of the Arapaho and the closely related Gros Ventres reveals far-reaching similarities, but there are several differences, among them the presence in the Gros Ventre series of a Fly dance, which is absent from the Arapaho series. This Fly dance does occur, however, among the Blackfeet, where Prince Maximilian discovered it in 1833. Since the Gros Ventres are known to have been in close contact with this tribe and since the dance has not been recorded anywhere else,[1] the Gros Ventres must

[1] Dr Goddard tells me that the Sarcee had the dance, but its introduction is also due to the Blackfeet.

be supposed to have adopted it from the Blackfeet, especially as the Fly dancers occupy exactly the same position in the two series. It is obvious however, that the introduction of a new society in this way alters the grading, and may even cause more serious displacements, of the other members of the series. In the instance just cited both the borrowing and the receiving tribe had a graded series. In other instances societies must have been borrowed by tribes with a graded series from tribes without the graded system, or *vice versa*. Thus, the Dog society occurs in the graded series of the Arapaho, Gros Ventres, Blackfeet, Hidatsa, and Mandan, and also among the ungraded societies of the Cheyenne and Crows. In such cases we must be careful to determine precisely what has been borrowed. For example, the Crows state that their Dog society was derived from the Hidatsa. Now, the Dogs formed one of the highest societies in the Hidatsa series, but as the Crows did not grade their organizations, this feature could not persist among them. Further, the officers of the Hidatsa Dogs might approach the meat-rack of the Goose Women and appropriate the best slices for themselves. This highly characteristic privilege likewise could not be introduced among the Crows, as there were no women's organizations among them. More important than this feature is the mode of entrance. As the Hidatsa method was foreign to the Crows, the Dog society among them was simply entered in the same way as their other military societies, without formal purchase or adoption. On the other hand, the Hidatsa Dogs had nothing to do with police duties, for these were vested in their Blackmouth society. But among the Crows the military societies took turns at policing the tribe, and accordingly the Dogs sometimes acted in this capacity. Summing up, we may say that in the Crow tribe the Dog organization is indeed translated: the borrowed ceremonial elements, still summed up under the old name, have received a specifically Crow stamp.

The illustration just given shows the secondary association of a borrowed ceremonial complex when adapted to a pre-existing tribal system. Single ceremonial elements, such as dewclaw rattles, may of course be adopted without requiring any special adaptation. Nevertheless, an analogous process may occur even in their case.

When an emblem has become the possession of one society in a tribe, it may be adopted by other societies. Thus, among the Crows two societies not merely different but antagonistic have identically the same straight and hooked sticks wrapped with otter skins, and other societies share the same type of officer's sash. Indeed, the origin of such a thing as a definite scheme, whether of purchase or anything else, becomes intelligible as the result of similar patterning on a single model that may have been in the first place produced by some historical accident. To return to the single ceremonial elements, it appears that they are often very mobile and may become associated with all sorts of complexes. This applies, for example, to the custom of expressing the opposite of one's meaning, which is sometimes coupled with obligatory foolhardiness, in other cases with a fire-dance and various ceremonial performances.

A student of the societies of this area must accordingly seek to determine both the specific tribal peculiarities with regard to the organization of societies and the precise extent to which borrowing has taken place. It is obvious that the sum total of features characterizing any one society will often embrace some that are not reducible to this formula because new features may be added from time to time without being borrowed, and representing individual additions rather than tribal peculiarities. However, the merging of alien elements into the native complexes covers a very large area of the field, and continued investigation from this point of view will doubtless prove fruitful.

AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK CITY

ABORIGINAL REMAINS IN THE CHAMPLAIN VALLEY

Third Paper

By G. H. PERKINS

IN the two papers preceding this[1] the writer has attempted to describe and figure many of the most characteristic objects that have been found and preserved in the region usually included in the Champlain valley. Here, as elsewhere, some extremely valuable articles, notably those of earthenware, have been lost or destroyed by ignorant finders, but there has been some advantage in this ignorance, for, because few have understood the value of the strange objects which have been exposed by plow or spade, there has been no attempt at deception in regard to them, and I do not think that the manufacture of "Indian relics" has ever been undertaken in this region. Hence we may feel quite sure that all the objects in our collections from the Champlain valley are what they are represented to be.

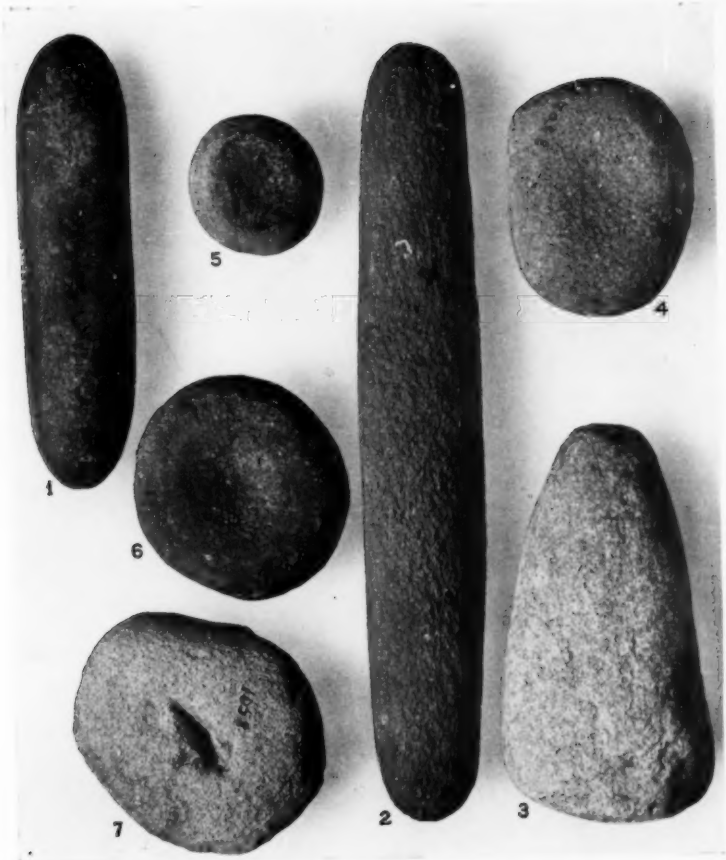
Probably because of the meeting in this valley of Algonkin and Iroquois and the occupancy of now one site and then another by families of one or the other of these peoples, we find considerable variety in the stone and other objects found.

Besides the specimens mentioned in the former papers there remain several kinds which should be added to the list, or it will be quite incomplete. As will be seen, some of the implements to be noticed are among the most conspicuous in our collections.

HAMMER-STONES AND PESTLES

Hammer or pounding stones are more abundant in this region than any other class of objects except those chipped from quartzite, although much less widely distributed than the latter. Naturally, implements used in pounding would be largely confined to camp or village sites where a stay of some duration was made. In a

[1] *American Anthropologist*, N. S., vol. XI, 607; vol. XIII, p. 239.



STONE IMPLEMENTS FROM THE CHAMPLAIN VALLEY

(One-half size.)

region strewn by drift furnishing bowlders of all sizes and of hard material, these would supply the need for such implements as those named. No artificial shaping could improve the form of many of the drift stones, and, while pounders were not infrequently made from small blocks of quartz or similar stone which were chipped or flaked, by far the greater number were simply the drift pebbles worked very little or not at all. They are of all sizes and weights, from a few ounces to several pounds. It is noticeable that while the flaked specimens are nearly or quite spherical, those pebbles used as hammers are more often oval and flattened on two sides. Most of these, as in other localities, are marked as hammers only, but conclusively such by the abrasion of the ends.

While there would seem to be no necessity for putting work into an article that could be picked up ready made, we do find now and then specimens that are worked all over.

Pl. I, 4, 6, and pl. II, 17, show some of the rudest specimens, as does pl. II, 18, though the last seems less rude, as the quartz pebbles used were very smooth and regular when taken. From these wholly unworked pounders we find in the same locality various grades to those like pl. II, 6, which are not only smoothed over the whole surface, but cupped on each side in order to insure a firmer hold. Few of our pounders are as small as that shown in pl. II, 18, but occasionally such little specimens—only three inches long and of small weight—are found. Stones similar in form to that shown in fig. 6 are found which bear no mark of abrasion and which may well have served as small mortars. Whatever their use, these cupped stones are always carefully made. From the simplest forms, like that of pl. I, 4, there may be found in our collections a regular series until we have the larger pounders like that shown in fig. 3, and the one more carefully finished in pl. II, 13, and finally those grooved for the attachment of a handle as in pl. II, 15.

As may be noticed, the last form is very much like the meat pounders used until recently by the Dakota. These Indians attached a handle by means of a piece of rawhide, which covered the stick used and was carried about the groove in the stone. Evidently this rawhide was put on when wet and shrunk to a tight fit when

dry. It is possible this may have been the ancient method as well. While on the one hand the oval or globular hammer developed into the pounder, like pl. II, 15, the more cylindrical pebble like pl. II, 8, in which only the ends are worked, developed into the carefully wrought implement such as that shown by pl. I, 2. Long, cylindrical pebbles, such as pl. II, 8, are not common, and the long pestle was most often made from a bit of stone broken from a larger piece. Much labor must needs have been expended in fashioning such an angular fragment into the regular and well-finished specimen.

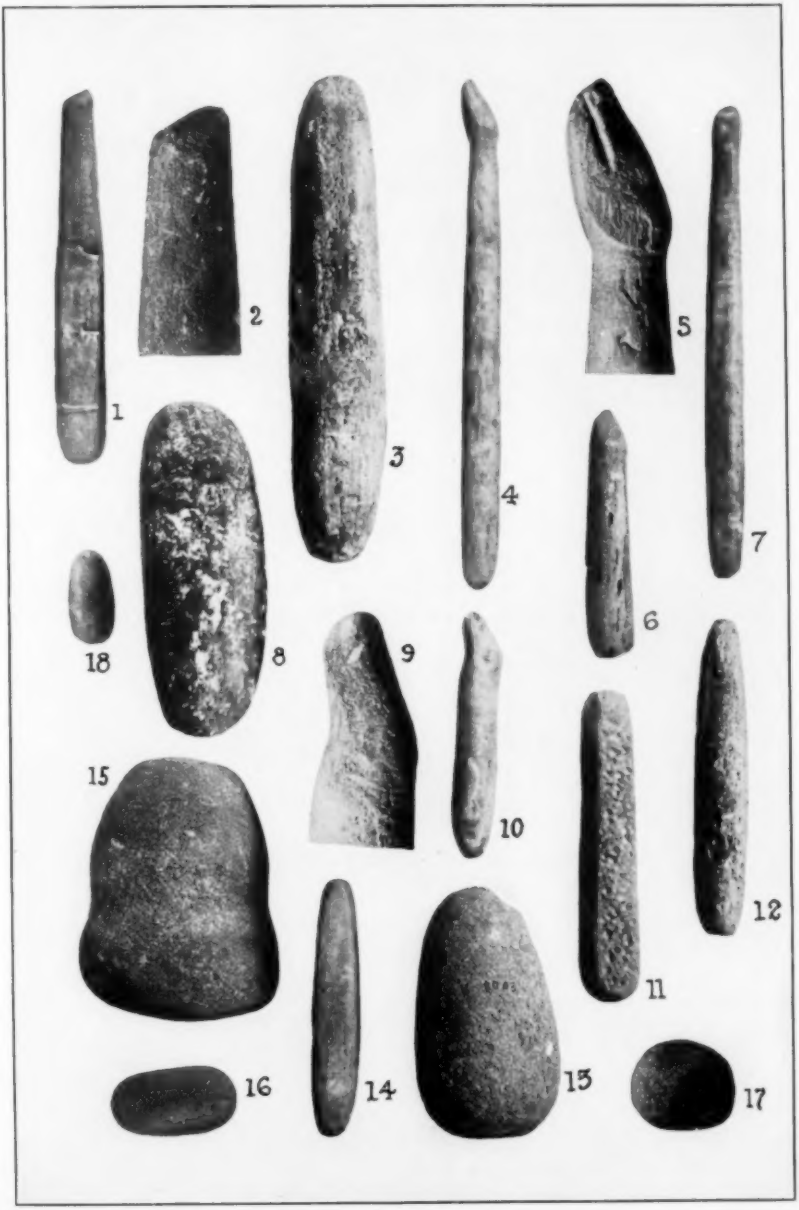
Pl. I, 1, 2, and pl. II, 3, 14, show examples of our ordinary pestles of the better sort. The material as well as the size of these pestles varies greatly, but necessarily only hard stone could be used. The average specimens are twelve to fifteen inches long and weigh from eight to ten pounds. The largest that have been found exceed two feet in length, and weigh twenty to twenty-seven pounds.

The pestle shown by pl. II, 11, is of hard limestone. Two sides are carefully smoothed, two left untouched as the prints of fossils show.

Pl. II, 1, 2, 4–7, 9, 10, are what have been called effigy pestles. They are all rounded at one end and carved in the likeness of animal heads at the other. It may be noted that the illustrations do not show the form of the head in all cases as well as might be desired. In the actual specimens the form of the head is often more distinct than in the figures given. For several reasons I am inclined to regard these as clubs rather than pestles. They are more slender and therefore more easily broken than the undoubted pestles; they are of softer material, and they show little sign of use.

Some, as pl. II, 4, 7, are very long. That shown in fig. 4, of light-green mica schist, is twenty-seven inches in length and nowhere more than two inches in diameter. Fig. 7 is nearly as long. The upper end of 4 is carved to represent a head shown better in fig. 5. This is the best specimen of this sort found; but a considerable number of others, more or less well done, have been recovered.

The difference in form, and also in other respects, between these Champlain valley pestles and those from the Mississippi valley or farther west will be apparent to anyone familiar with the western



PESTLES AND CLUBS FROM THE CHAMPLAIN VALLEY

(1, 4, 6, 7, 10, about one-ninth size; the other figures are one-third size)

forms. Pestles are not abundant in this region, and it is remarkable that this is true, for, when settled at least, each Indian family must have needed a mortar and its related pestle for the preparation of their daily food. When the size and durability of such implements as these are considered, it seems almost certain that if they really were as common as might be expected, many more of them would be found.

Among those specimens that at first sight appear to be allied with hammers are some forms not very common, but still not especially rare, which are very puzzling.

Pl. 1, 5, 7, are of this sort. The specimen shown in fig. 5 is much more carefully made than is usual in hammers. The illustration does not show fully the difference between such an object and that shown in fig. 6, but the smaller specimen is much more elaborately shaped and its surface is smoothed on every part. As in the case of fig. 5, these finer objects are smaller than the hammers. The upper and lower surfaces may be cupped, though not deeply, or flat, and the edges are evenly beveled, as is not too well shown in fig. 5, so that there is a sharp ridge about the middle. It seems more probable that these specimens were more closely allied to the discoidal or chungke stones than to hammers; that is, they were for use in playing games.

More problematical is the specimen shown in fig. 7 of pl. 1. Stones of this sort occur of various sizes: some are quite large, few smaller than fig. 7, which exceeds three inches in its long diameter, being shown about half its full size. Some of these are quite rude, others, as in the figure, are more or less smoothed over the entire surface. The material is usually hard and gritty, and the hollow is of the form seen in the figure.

It would seem most likely that such stones were used in sharpening bone awls, or some such instruments, or at first in shaping the points.

BOILING STONES

Stones precisely like the hammer-stones in form are frequently found in the same localities, that is about any camp site. Obviously, the same drift pebbles were selected for use as hammers or

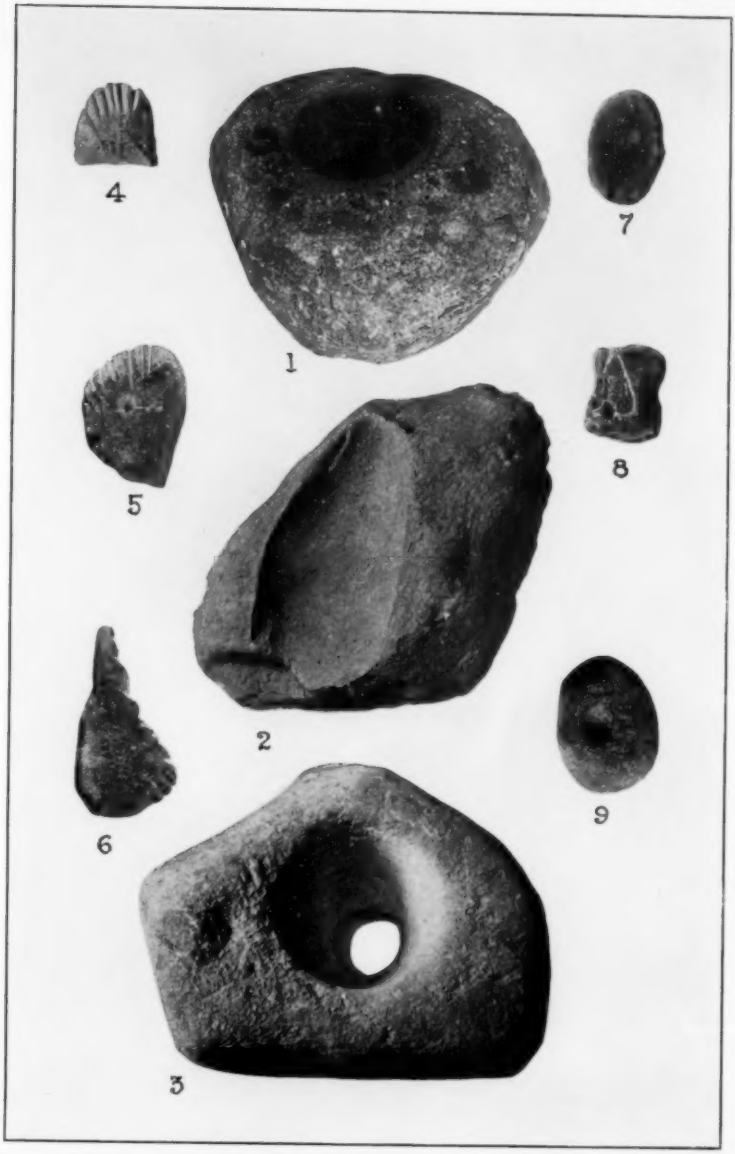
to be heated and put into pots of water in order to cook whatever might be needed. As was shown in the first of these articles, nearly all the vessels used by the aborigines were of earthenware, and these were for the greater part too fragile to endure long suspension over the camp-fire. As is well known, cooking was accomplished in such pots, without placing them over the fire, by putting hot stones into the water they contained. The abraded ends mark the hammer, and the reddened and cracked surface marks the boiling stone. None of these are as large as the largest pounders, and they are more uniform in size. Of course similar stones that chanced to be about the fire would show the same signs, though not used.

MORTARS

As has been intimated in speaking of pestles, mortars are not at all abundant in the Champlain valley. This is difficult to explain, for if any of the implements and utensils of the aborigines were to endure and be easily found in later times, none would appear to be so likely to exist intact to the present time as these. Nevertheless, I have seen not more than a dozen or so. Some of the larger mortars, either whole or broken, were used in building stone walls as any suitably sized stones would be used, but this can account for only a small number.

Pl. III shows three of the best of our mortars. As in case of these, each specimen is in some respects unlike any others. Of the three figures, 1 and 3 are shown about one-fifth full size, and fig. 2 one-ninth. The latter is one of the largest that has been found here. All exhibit the result of much labor, not merely in the excavation but also in shaping and smoothing the whole surface.

Fig. 1 of the plate was made from a small bowlder of reddish granite that was found in the drift. Whether its form is as found, or more or less hammered to its present shape, cannot be determined with certainty, but in portions of its surface it has evidently been rubbed artificially and the entire surface is smooth as if water-worn; but of course this would be the case in any drift rock. The cavity shown is very well shaped; it is five inches in diameter and two and a half deep. On the opposite side of the stone is a similar



MORTARS, ETC., CHAMPLAIN VALLEY

(1 and 3 about one-fifth size; 2 about one-ninth size; the others one-fourth)

cavity, but somewhat larger than that shown. What particular advantage there was in having a hollow on both sides of the stone, when only one could be used at a time, is not evident. Another noticeable feature is seen in the small cup-like cavity on each side of the large one. Stones like that seen in fig. 9, in which there is only one small cavity, are not uncommon. To these reference will be made later.

Fig. 2 shows one of our largest mortars. It was shaped from a large piece of flat stone, as seen in the figure. The material is gray quartzite; the greatest length of the object is 27 inches, width 17, and thickness 4 to 5½. The unusual form of the excavation makes this mortar a connecting link between the regular mortar and the flat metate. This cavity is 15 × 10 inches, and where deepest it is 4 inches. The weight approximates fifty pounds.

In fig. 3 is shown another form, fashioned from a large piece of greenish sandstone, much like that from which ordinary grindstones are made. As the figure shows, the cavity is deep and regular, and has no bottom. Apparently after the side shown was finished, some one, either carelessly or because the stone was turned down on the side seen, began to make a cavity on the opposite side, breaking through into that already made. The surface has been rubbed and somewhat shaped. This mortar is 14 inches long and 9 inches wide. The greatest thickness is 3½ inches. The cavity seen is 5 inches in diameter. A small depression at the left of the large cavity will be noticed. In this specimen, besides the shallow excavation on the side not shown, which broke into the completed one, there is another at the left end of the mass, which, though not very deep, has about the same diameter as that shown.

Stones or bits of ledges, which bear only small cavities like those at the sides of the larger ones, or the cavity shown in the small stone in pl. III, fig. 9, are not uncommon. Sometimes a flattish piece of stone, five or six inches in diameter, has only one, or it may be two or three, of these little cups or cavities an inch or so across and usually but a fraction of an inch deep.

SINKERS

Pl. III, figs. 7, 8, show two examples of objects common in certain localities, but not widely distributed. They occur near lakes or large ponds, but nowhere else. The usual supposition that they were used for sinkers attached to nets or large lines seems most probable. They are generally merely flat bits of stone or flat pebbles notched on each side, but with little other evidence of having been worked. They are three or four inches long. Occasionally is found one of these sinkers that is more carefully made and is smoothed over the whole surface.

SINEW STONES

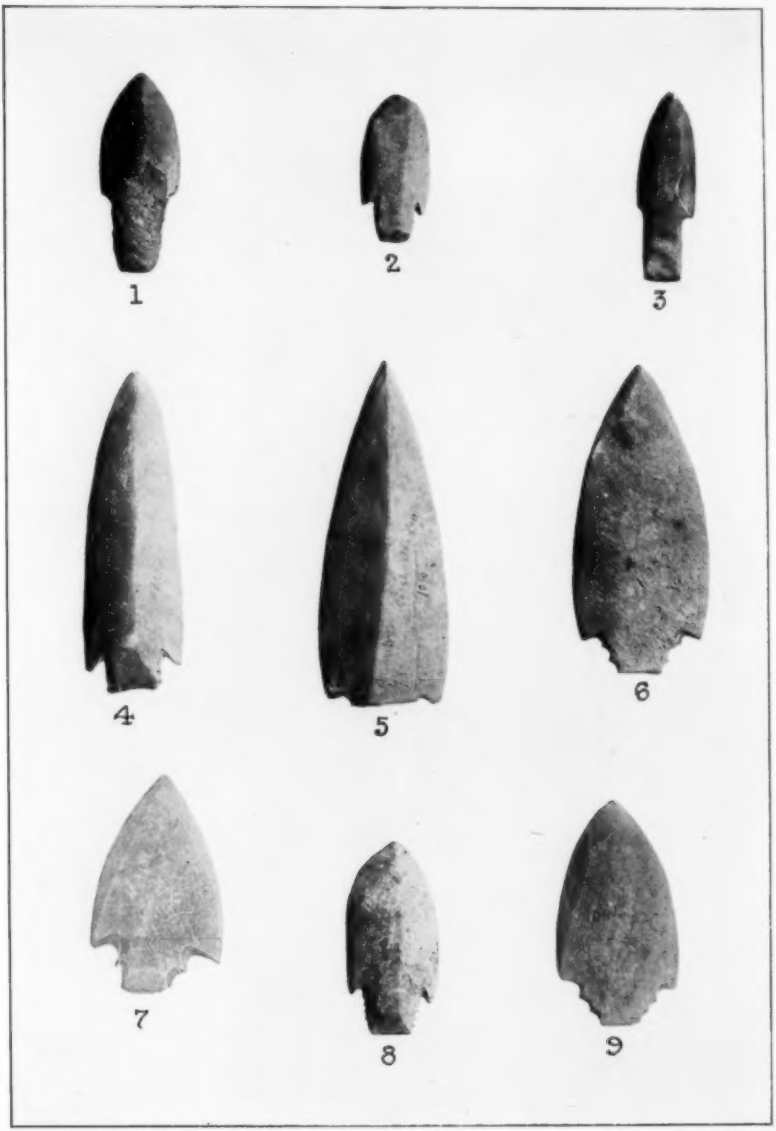
Pl. III, 4, 5, 6, illustrate peculiar grooved stones such as those which in other localities have been called "sinew stones," designed for use in preparing cord from sinews of animals. They are of hard, compact material, and are generally well made, though there is no attempt at ornament. All of our specimens are flat and at one end always rounded, as seen in the figures. Such objects are not very uncommon in the Champlain valley.

OBJECTS OF SLATE

In the first of this series of articles slate knives and points are mentioned, and four of them are figured on one of the plates. At that time there was no intention of considering these implements further, or the whole matter would have been left for the present paper, so that all might have been considered together. On looking over our collections, so many of these slate knives, etc., have been noticed that it seems worth while to give them more extended notice. The specimens first figured[1] are similar but not the same as those shown on pl. IV and V.

While these slate knives are by no means confined to the Champlain valley, but are found north in Canada, west in New York, and, rarely, in Maine, they are yet among our most characteristic specimens, and are probably more abundant and varied here than elsewhere. With some exceptions these implements are always

[1] *American Anthropologist*, N. S., vol. XI, pl. XXIX.



SLATE KNIVES, CHAMPLAIN VALLEY

(One-half size)

hafted, often barbed, and usually notched along each side of the shank or haft. The figures on pls. IV and V illustrate a fairly full series of the different forms that have been found. They are almost always regular in shape and smoothly finished. The variously colored slate—red, purple, or drab—from which they are made is found abundantly in place in western Vermont and adjacent parts of New York, and is also not infrequently found in the drift along the shore of Lake Champlain, having been carried northward by the ice and currents of the lake.

There have been found a few specimens that seem to have been only partly completed, and thus show that the bit of stone, ordinary roofing slate, was chipped into some semblance of the desired form and then rubbed with sand until smooth and in some cases polished. Usually the work was very well done; indeed none of the ordinary implements are so nicely shaped and smoothed as these. The edges are usually sharp; but in some specimens they are rounded, and apparently were never fitted for cutting.

The resemblance of these objects to some of the Eskimo knives has long since been noticed by various authors. Indeed, some have found sufficient similarity to suggest the idea that at some time there was an Eskimo migration or at least a visit to this region. Few will, I think, find convincing evidence of this in the presence of these slate knives.

It seems difficult to understand how many of these objects could have been serviceable as knives, though the form suggests this implement, for the material is too soft and fragile to endure hard use. Most of the specimens shown half-size on pl. IV are strong enough to have served as knives. The notched stems mentioned above can be readily seen in figs. 7, 8, and 9, and less distinctly in some of the others. As shown, some of the notches are large and few, others smaller and more numerous. Occasionally, as in fig. 3, the stem is not notched, but this is exceptional.

On pl. V, 1–7 (shown one-third size) are illustrated our largest examples of this kind. Such implements as that represented in fig. 2 of this plate may well have served as skin-dressers or for use in making pottery, but, like most of the rest, they are not hard

enough for wood-working, and still less for working stone. The specimen shown in fig. 4 is one of the most perfectly finished that has been found; it is not only regular in shape, but finely polished. It is eight inches long and nowhere more than an inch wide. It has no haft, nor does it show any sign of use. The material is light-green slate. More slender is the specimen shown in fig. 5, which has suffered from exposure, but was probably as well finished originally as that illustrated in fig. 4. It is nine inches long, and at the widest part an inch and a half, though most of the blade is narrow. It is quite thin, and certainly could not have endured other than careful usage. As seen, there is a small haft, not very deeply notched, along the sides. Both of these objects may possibly be regarded as daggers, but it is not probable that either could have been used more than once. The implement shown in fig. 8 is peculiar, not only in the absence of a stem, but in the smoothly rounded lower edge. This, as well as fig. 9, is one-half size.

The specimen shown in fig. 6 is the only one of its kind that I have seen. The original form of the upper end is doubtful, as it is broken, but apparently it was pointed. It is figured more nearly full-size than the other specimens, being 3½ inches long and 3½ wide. Of course when complete it was somewhat longer—about 5 inches long, I should judge. The material is a light drab slate.

UNIVERSITY OF VERMONT
BURLINGTON, VERMONT

SLATE KNIVES, ETC., FROM THE CHAMPLAIN VALLEY

(1 to 7 one-third size; 8 and 9 one-half size)

LUCAYAN REMAINS ON THE CAICOS ISLANDS

By THEODOOR DE BOOY

Introduction

THE Caicos islands, originally a part of the Bahamas and governed from Nassau, but now having a more independent system of government under the supervision of the Governor of Jamaica, consist of a group of islands situated about lat. 22°–21° N. and long. 71° 30′–72° 30′ W. (see map, fig. 1).[1] The islands are formed of the soft coral limestone common to these regions, and consist of four large cays, four or five of medium size, and a great number of smaller ones ranging in size from one hundred square feet to a mile square. With the exception of the Seal cays, bordering the Caicos Bank on the south side, and French cay on the western limit of the bank, I have been able to find conclusive evidence of pre-Columbian habitation on a majority of the islands: some of the smaller cays of course not being included in this general statement.

Outside of a settlement called Kew, on Grand Caicos, where one can find trees (tamarind and madeira) up to about fifteen inches in diameter, the vegetation on the Caicos islands is extremely small. The coppices never exceed ten feet, and usually are not more than six feet high, and, as throughout the Bahamas, cacti form the prevailing undergrowth. Of this latter variety of the Caicos flora I have occasion to speak feelingly, as one day, while about to pick up a fragment of Lucayan pottery, I fell into a "prickly pear" and it took me the better part of a day to extract the spines. The negro inhabitants grow a little corn on their clearings, and this, together with sweet potatoes and yams, affords their principal food supply. Need I say that the destitution, want, and squalor on some of the islands are beyond imagination?

In spite of the poverty nowadays, one can still see the remains

[1] Geographically speaking, the Caicos and the Turks islands are always included in the Bahamas.

of former greatness in many places. Before the liberation of the slaves throughout the British West Indies in, I believe, 1838, several large and rich cotton plantations were in existence on these islands. From all accounts (and a negro has a very good memory when it comes to traditions that are handed down to him by his father or

FIG. 1.— Map of Caicos Bank.

grandfather) some of the plantations on Grand Caicos had as many as seven hundred slaves, and I have seen slave quarters, built of solid stone masonry, that could accommodate fully half this number. As mention will be made of the plantations more than once in these pages, I shall not now enlarge on the subject.

At one time the northern side of the Caicos group was a favorite resort for pirates and freebooters. Evidence is not wanting that the various inlets dividing the cays were much deeper in those days, allowing a vessel of twelve-foot draft to pass through them, the small creeks making excellent drydocks in which to overhaul and calk the piratical craft. On the former McIntosh plantation at Bellevue, on Grand Caicos, I came across some fortified terraces overlooking the Lorimer inlet, which, report said, served the purpose of defending the planters in case a landing was planned by the dreaded pirates. One can talk to a Caicos negro for hardly half an hour without hearing some reference made to buried treasure, of which the blacks always seem to know the whereabouts, but which they never attempt to excavate.

A few words may not be amiss about the Caicos Bank. The boundaries of the islands on the bank side, as shown on the charts, are extremely inaccurate, only the general outline of the group being given the true position. This probably is owing to the lack of deep water on the bank proper, which makes it of no interest to the mariner. Inter-island navigation is extremely puzzling, and should never be attempted without the guidance of some competent local pilot: at that, it is not safe to sail by night, as the Caicos Bank has many dangerous shoals which cannot be observed until one is almost on top of them. In going from cay to cay on the northern side (if one has a staunch craft) it is far better to stand outside the reef in good weather, as this does away with the possibility of grounding one's vessel in shoal water and having to wait eight hours for the tide to get released.

Plug tobacco (purchased at the stores on South Caicos) will be found an excellent medium for purchase and barter throughout the cays. I have been able to purchase foodstuffs, curios, the services of laborers and guides, etc., far better with a few plugs of tobacco and some pennies, than I could have done with money of large denomination.

The Ancient Inhabitants

When Columbus first set foot within the New World, it was upon one of the Bahama islands, called Guanahané by the natives whom

he found there. This island Columbus named San Salvador, and it is still known by this name and also by the name Watlings island on British charts. Columbus afterward proceeded to Little and Large Exuma, and on all these visits his accounts of the natives (or Indians as he called them) are the same. Although these people, from all accounts, called themselves Ciboneys, they later received the name "Lucayans," and, as they are generally thus designated, I shall employ the same term.

From the accounts Columbus gave, the Lucayans appeared to be a gentle, peaceable race, unskilled in warfare, possessing no offensive weapons, and of an extremely tractable disposition. They treated Columbus and his followers with the utmost respect and deference, showed as much hospitality as they were able, and did their utmost to welcome the "visitors from Heaven," as they fondly imagined the white men to be.

It is evident that the Lucayans were mostly agriculturists. Acosta, in his history of the Indies, mentions the fact that the Lucayans made cassava bread from both the poisonous and the non-poisonous variety of the yucca, which were cultivated in the fields; and this bread, together with iguanas, fish, and fruit, formed their principal diet. Whether or not in those days large animals existed on these islands is a matter for conjecture: the fact remains that, outside of cattle, swine, horses, and donkeys which have been introduced on the Bahamas by white men, no indigenous mammals now exist, and did not exist in pre-Columbian times, with the exception of a species of dog that never barked and a kind of coney, or rabbit, called *utia* by the natives. And still, I have found more than one vertebra of some large mammal amongst Lucayan material in caves, and also the fang of a boar, which probably had been used for incising pottery, of which mention will be made later. Now, whether or not these bones were brought by the Lucayans from other regions to the Bahamas is a problem I can not solve. Outside of the cultivation of yucca and fruit, the natives also must have grown cotton, as is evident from the fact that Columbus in his diary mentions their bringing balls of cotton for barter and that this seemed to be their most valued possession. Also

they made their "hamackas" (hammocks) of cotton, and it would seem that for this latter invention alone the Lucayans have a claim on posterity.

It was erroneously supposed by Columbus that the Lucayans made a practice of anthropophagy, because, on exploring the huts in which the natives lived, his sailors found dried human remains, such as arms and legs. It was later proved that these were kept from reverential motives and belonged to the ancestors of the occupant of the hut.

The Lucayans were a very cleanly people, taking a swim after each meal, which practice apparently did not produce any ill effect. Also their houses were kept in a remarkable state of cleanliness.

From the skeletal remains that have been found in various parts of the Bahamas, it appears that the Lucayans were of normal height and development, excepting the skull, which, like that of the Flathead Indians of our Northwest, the Aymara of Lake Titicaca, and some other tribes, was artificially flattened in infancy, giving the forehead a very broad appearance. Columbus notes this peculiarity in his diary, and I have observed that this sloping forehead is depicted on the small heads belonging to the rims of earthenware bowls which I have found. Columbus also makes special mention of the handsome appearance of both the men and the women: their skin was copper-colored and their features were extremely regular. The Lucayans were wont to go about naked, the men wearing a headdress of feathers, and some of the women occasionally wearing a small mantle of cotton fiber. It also seemed to be customary for the men to paint their faces to a slight extent.

The dwellings were constructed of branches of trees and interwoven palm leaves, and were built upon some sort of foundation made of coral rock. I have found many of these foundations on the islands. The earth with which they must have been covered has of course disappeared, but I could still find the fragments of pottery and other utensils in great abundance among the stones.

The Lucayans were governed by caciques, who, it seems, were elected by the different tribes, a person being chosen who was exceptionally proficient in feats of strength and endurance. Al-

though this office was not hereditary, the cacique frequently managed to secure the election of one of his sons when he himself became too old to hold office. While monogamy was practised by the Lucayans and their standard of morality was of a fairly high order, the cacique as a rule had several wives, probably owing to his position in the tribe. In this case, however, one of his wives was the principal, and the others appear to have been her helpers more than anything else.

While it is difficult to state exactly what form of religion the Lucayans had, I believe it may safely be assumed that it was the same as that of the other Arawak tribes, some of which still survive in British Guiana. These tribes believe in good and bad spirits; the latter, called *kenaimas*, being responsible for all evil influence, which the *peaiman*, the tribal priest and medicine-man, was instrumental in warding off. The Arawak also believe in a soul, which, they explain, flies away at the time of death, for then they can no longer see the reflection of a person in the pupil of the eye. The *zemes* were inferior deities, acting as messengers for the priests to the omnipotent being inhabiting the sky, in which the natives firmly believed. The caciques kept images of these *zemes* in their huts, and it was no unusual thing for the Lucayans to paint representations of these inferior deities on their bodies at certain festivals.

From the fragments of pottery which I have found, the Lucayans must have reached a high degree of proficiency in the ceramic art. Karl von den Steinen, the eminent German ethnologist, classes the Arawak tribes under the heading "potter-tribes," and this name is particularly appropriate to the Lucayans. Although none of the pottery that I have found is glazed, and none of it is ornamented with coloring, in general outline (and I can only conjecture the shapes, as I was not able to find other than fragmentary pieces) it must have been especially graceful, and the small heads, fastened to the rims of the vessels and probably serving as handles, show a clearness of outline and detail that compares favorably with more modern objects of art. Mention of these pottery fragments will be made later, and some of the illustrations give examples of incised and impressed ornamentation.

In addition to their high development in ceramics, the implements of the Lucayan people show graceful outlines, some of the jadeite chisels particularly being extremely symmetrical in shape. As builders of canoes, also, the Lucayans had few equals: some of these craft seated as many as a hundred people, and the fact that long trips were made in them proves conclusively that they were seaworthy. Another example of the artistic ability of this people is found in the carved stools of quadruped form used by the caciques, one of which is to be found in the United States National Museum at Washington. Navarrete makes mention of these in his *Primer Viage de Colon*.

I have found a great deal of evidence that the Lucayans inhabited many of the caves with which the Bahamas abound. I am inclined to believe that these caves were used primarily as places of worship and secondarily as shelters during hurricanes, and that it was not until the persecution by the Spaniards commenced that the Lucayans began to employ them as permanent abodes. Frequently the mouths of these caves are very hard to find, owing to the dense undergrowth, consequently they would make ideal places of refuge.

It is estimated that when Columbus discovered the Bahamas, the Lucayans numbered about forty thousand souls. Is it not shameful to contemplate that, a quarter of a century after these people first made the white visitors welcome to their islands, not one of them was left to speak of the change the Spanish rule had made in their former peaceful existence? Before dwelling on their extermination by the Spaniards, a few words will not be amiss regarding the origin of the Lucayans.

The Arawak previously mentioned are generally supposed to have come from the Matto Grosso region in the interior of Brazil. It is from this people that the Lucayans originated, after the parent group had migrated from Matto Grosso to the interior and the coast of British Guiana. While it is impossible to make any positive statement, I imagine that it was due to the constant persecution which the peaceful Arawak had to endure from the warlike Caribs that some of the tribes detached themselves and

gradually settled farther north on the Greater and the Lesser Antilles.[1] And even here it seems that they were not safe from oppression by the Caribs, but were forced to journey farther and farther northward until some of the tribes finally settled on the Bahama islands.[2] These then were afterward known as the Lucayans. It is hardly to be believed that this occupancy had been of long duration, for we find that at this time the Caribs were already taking possession of Haiti and waging fierce war on the Arawak tribes living on that island. What conclusion can be more obvious than that the Caribs soon would have crossed over to the more northerly islands in their canoes and have commenced the extermination of the Lucayans that was afterward completed by the Spaniards? And from the fact that the island of Haiti is far richer, more fertile, and better watered than the Bahamas, I believe that the Lucayans settled on the Bahamas only after the Caribs came to Haiti, which event can have been but a short time before the discovery by Columbus.

How the inhabitants fared after the Spaniards took possession of the West Indies is a matter of general knowledge. At first forced to pay a tribute or tax, afterward made to serve as laborers for a certain time, and finally kept in absolute bondage, a people accustomed to spend the greater part of their time in hammocks and working only when it was necessary to cultivate their scanty crops, would, as a matter of course, become speedily exterminated under the stern Spanish rule. The bondage was called the *encomienda*, "protection," which gave a certain number of laborers to each of the Spanish land owners for the cultivation of crops and the working of mines. Considering the average character of the outlaws who went to the New World, it cannot be wondered that this system was a source of abuses, and that the natives, living on the *repartimientos*, or allotments, granted to the followers of Columbus,

[1] The contemporary historians of the Columbian era inform us of the discovery of some islands in the West Indies on which the men and the women spoke different languages. The explanation is simple. The Caribs, having conquered the peaceful Arawak, killed the men and kept the women as captives. This would account for the two languages spoken.

[2] It is now known that some of the Arawak tribes not only navigated as far north as the Bahamas, but even landed and settled in Florida.

were made to work beyond the limits of their endurance. The Arawak tribes at the best were not long-lived: Im Thurn states[1] that he never came across an Arawak exceeding forty years of age. The speedy extermination of these people, when made to do unusual work and to suffer the hardships of the Spanish rule in the West Indies, was therefore a foregone conclusion. Cases are noted in historical records in which a landowner was assigned three hundred laborers, of whom, after three months, only thirty were alive.

Naturally these practices soon made the Lucayans change their minds about the "visitors from Heaven." At first, whenever they saw a Spanish vessel anchor off their island, they would joyfully board the craft, carrying such humble presents as they were able to give, and receive in return hawk-bells and toys, which to them seemed the most wonderful celestial gifts. But when the Spaniards began to go ashore on some of these expeditions, and to capture the men and carry them off to work in the mines of Haiti, it was not long before the Lucayans dreaded the approach of a Spanish vessel and hastened to hide themselves in the caves and underbrush. Even here the natives were not safe, for, tracked by bloodhounds, they were easily captured and carried off, as they had always been peaceful and were not able to offer the slightest resistance.

This, then, is the brief history of the extermination of the Lucayans: the men captured and carried off to work in the mines and die a miserable death; the women left widowed with no men to propagate the race. There is little wonder that after a quarter of a century the Lucayans were extinct.

Results of the Exploration

Island of Providenciales

Juba Point.—Near a cape on the southern coast of Providenciales, called Juba Point, are two caves which, according to the report of my guide and that of the other inhabitants of a small settlement called Kingston, had never before been entered by a white man, except on one occasion, when a guano prospector had

[1] *Among the Indians of Guiana*, London, 1883.

looked into them but had failed to find sufficient guano to make the working of the caves profitable. This was about the year 1880, since which time the caves had not been entered, as the average negro is too superstitious to enter a cave at all, unless accompanied by a white man.

Both the Juba Point caves in all probability lead to a large "ocean-hole," an enormous cavity in the coral rock communicating subterraneously with the sea. In this instance the hole was about three miles inland. Usually these holes contain fresh water which

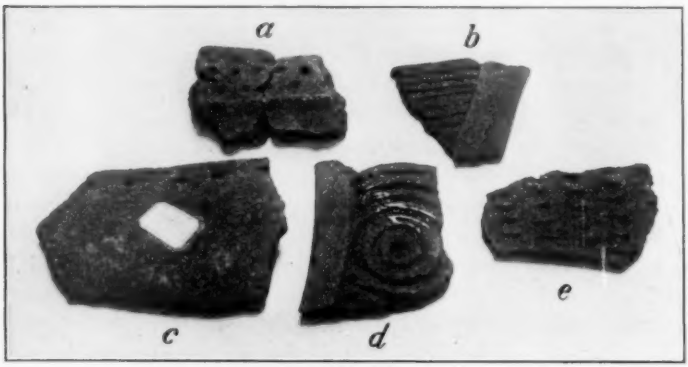


FIG. 2.—Pottery fragments.

rises and falls with the tides. The hole mentioned is fully 100 feet in diameter and about 30 feet deep, while the caves are situated within 200 feet of it.

The mouth of the first cave is about three feet in diameter; the shaft of the cave, ten feet in length, slopes downward at an angle of about 45 degrees and leads into a long chamber, which in turn branches off into two or three smaller ones of no importance. There was some guano in this cave, but careful exploration showed no signs of prehistoric habitation; this was not surprising, however, as access to the main chamber of the cave could be gained only by means of a rope.

There is a small mound outside the mouth of this cave, on which I found a small fragment of incised pottery (fig. 2, *e*).

The second cave has a larger mouth, about ten feet in diameter, a very gradually downward-sloping shaft fully seven feet wide, leading into a large main chamber with two branches, in all probability communicating with the ocean-hole. This main chamber is readily accessible, but unfortunately a great deal of limestone had fallen from the roof of the cave and had covered the floor. There can be no doubt, however, that this cave was once inhabited, as excavation produced several pieces of charred wood, a few turtle and other bones, some fragments of pottery, and a small jadeite hatchet (fig. 3, *c*). This implement was found, together with some burned wood and two or three conch-shells, beneath about eighteen inches of cave-earth. The majority of the potsherds were of plain ware, but three fragments show ornamentation by incision. One was part of the rim of a large bowl of light reddish-brown clay, decorated with simple straight lines; fig. 4 shows a similar fragment, of dark-brown clay, with straight line incisions and circular impressions; while the third was a fragment of a vessel of dark-gray clay, ornamented with circular impressions. Like the other material found, these sherds, as well as several unornamented ones, were found beneath earth and pieces of limestone coral.

FIG. 3.—Stone implements.

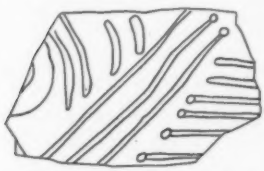


FIG. 4.—Fragment of incised pottery.

West Harbour Bluff.—West Harbour bluff is a cape on the southwestern point of Providenciales, and an open cave is found on the western side of the bluff. This cave is practically open, with two

small protected chambers under the rock. A stretch of beach about twenty feet long leads from the cave to the sea. I found many conch-shells grown in the rocks between the cave and the beach, and this in itself is a sign of Lucayan occupancy. One can always tell a conch-shell opened by a Lucayan, from a more modern one opened by a negro, as the opening by means of which the conch is extracted from the shell is of a different shape and in a different location in the two cases.

The bottom of one of the two chambers in this cave was covered with "cave-earth," and, as throughout these pages mention will be made of this substance, it may be well to explain what it is. Throughout the Bahama islands are a great many coral limestone caves, and in the majority of these is found a species of earth, varying from light gray to dark brown in color, rich in phosphoric acid but containing practically no ammonia. Although this cave-earth is generally spoken of as "guano," from the fact that it contains such a small amount of ammonia it is hardly conceivable that the substance really is excrement, although the natives would have one believe that the bats (of which usually there is a great abundance in the caves) are responsible for the deposits. The cave-earth is deposited on the floor of the caves and in places exceeds four feet in depth.

I commenced excavation in the small chamber, the floor of which was covered with this cave-earth. This was in a rather deep layer, and the material found was practically at the bottom on ground rock. The following objects were found:

Several bones and bone implements, among which were a hoe fashioned out of a turtle-bone; three awls; one or two smaller, pointed bones probably used for ornamenting pottery, and the fang of a boar, probably employed for the same purpose. I also found about ten sherds of unornamented pottery, and three decorated fragments. Fig. 2, *d*, shows a sherd of brown clay with incised and impressed circular ornamentation. Fragment *b* of the same illustration is a part of the rim of a bowl of dark-brown ware and is decorated with incised straight lines. The third incised sherd is too small to be of special interest.

In addition to these fragments, I found a small head (fig. 5, *a*) which evidently had been part of a bowl. It is of light-brown clay, and it is noteworthy that the sloping Lucayan forehead is clearly indicated. I have noticed this peculiarity in all the other heads I have been able to find.

Indian Hill (*Malcolm Roads*).—From reports given me, I have every reason to believe that one could find a great deal of Lucayan material in the vicinity of the "Indian Hill" near the Malcolm Roads on the western coast of Providenciales. At the time I had no opportunity of going there, but as the Caicos negro

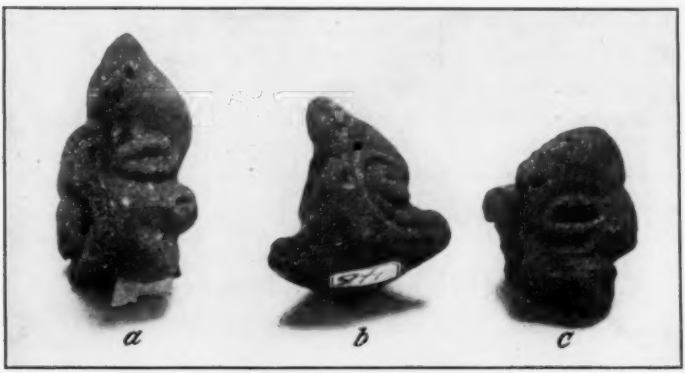


FIG. 5.—Pottery heads.

is too stupid to invent stories of the finding of pottery, etc., I can see no reason why these reports are not to be believed.

Blue Hills.—As in the case of "Indian Hill," I was told of the finding of stone implements, or "thunderbolts" as the negroes call them, in the neighborhood of a colored settlement called Blue Hills, on the northern coast of Providenciales.

THE AMBERGRIS CAYS

Ambergris Cay.—As at Juba Point on Providenciales, there is a large ocean-hole about a mile inland from the southern coast of Ambergris cay, and about six small caves from which underground

passages lead to the hole. These passages, however, are closed, and the only trace of Lucayan habitation that I could find was a conch-shell in the mouth of one of the caves. It is strange that no other traces on the entire island (which is about four miles long and three miles wide) could be found, as it is fairly fertile, has a good beach on the southern and eastern coasts, and would seem to be directly in the track of inter-island navigation. The caves are all small and difficult of access. I could find no mounds on the island, neither on the hills nor on the salina flats.

Little Ambergris Cay.—A small sandy cay with excellent well-water and quite a large cocoanut grove, but no traces of previous habitation.

Fish Cays.—Three small rocky cays over which the sea breaks continually in bad weather. Landing here was no easy matter, and had to be given up after one or two attempts, as the sea was running too high. It seems to me doubtful, however, whether or not I should have found any evidence of aboriginal occupancy, as even in calm weather landing must have been difficult.

NORTH CAICOS ISLAND

Sandy Point.—Sandy Point is on the northwestern coast of North Caicos, between Parrot cay and St Mary cays. On the old St James property (which a hundred years ago must have been a splendid cotton plantation and on which one may still see the ruins of a magnificent house and driveway) I found one cave with two mouths, both of which lead into the main chamber. Here I found the usual deposit of cave-earth on the floor, and on excavating in one or two places, directly under a spot where the roof of the cave was smoked as if cooking had been done there at one time, I found one or two bones (presumably of a large green turtle), one sherd of incised pottery, five or six sherds of unornamented pottery, one brown flint hatchet-head, and one highly polished black flint chisel with cut-

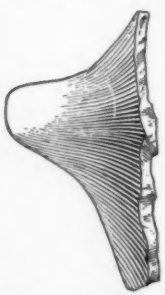


FIG. 6.—Pottery fragment showing handle.

ting-edge. This chisel is one of the most symmetrical and beautiful prehistoric stone implements known to me. The pottery fragment is part of a reddish-brown clay bowl with one of the lugs, or handles, attached.

It is to be regretted that on the Caicos islands, owing to the climatic conditions and to the rocky soil, pottery and other prehistoric objects have so slender a chance of being preserved in their entirety.

Pumpkin Bluff.—This bluff lies between Sandy Point and the mouth of Bottle creek (of which mention will be made later) on the north coast of North Caicos. Some 50 yards due east of the bluff

FIG. 7.—Fragment of Lucayan bowl.

proper is a cave with a single chamber, where I succeeded in finding an exceptionally fine fragment of a bowl of light-brown clay. The diameter of this vessel was about ten inches, and the bowl cannot have been more than one inch high (fig. 7). The forehead of the small head, as usual, has a perceptible slope. I also found the usual turtle and other bones, and a few unornamented pottery fragments. All this material, as usual, was covered with a heavy deposit of cave-earth. The rest of the cave had been filled with a considerable amount of sea-sand which must have washed in during northern storms.

Whitby.—This settlement derives its name from the old plantation in the vicinity, the ruins of which may still be seen. I could

find no trace here of Lucayan occupancy, although I heard afterward that some of the natives knew of a field in the neighborhood where potsherds had been found. I had no time then to return, but succeeded in obtaining a fairly good specimen of Indian imple-

FIG. 8.—Clearing at "Mountain".

ment, made of jadeite and quite well polished. Whitby lies about a quarter of a mile inland and one mile east of Pumpkin Bluff.

Bottle Creek.—Bottle creek is a sea inlet dividing North Caicos from Grand Caicos. The creek proper has several settlements on it, all on the west side, and allows a vessel drawing not more than three feet of water to enter through the northern mouth. The southern mouth, however, leading to the Caicos Bank, is fit for small rowboats only, and even then only at high water. Bottle creek at one time was a favorite location for large plantations, and there still are many negro settlements along its banks which derive their names from these. Many of the old plantations show traces of having been fortified against pirates, which at one time were plentiful along the northern coast of the Caicos islands and which used Bottle Creek inlet (in those days considerably deeper than now) as a convenient place for overhauling their craft.

The most northerly settlement, called Bellevue, consists of the

old McIntosh and Mountain plantations. The former place is about six miles from the northern coast, and the Mountain plantation is situated two miles inland, communicating by means of a carriage road with Bellevue proper. On "Mountain," the original clearing of the Lucayans can still be plainly seen (fig. 8). There are several mounds on these clearings, on which evidently the original inhabitants built their huts and shelter places. The sand with which the stones of these mounds must have been covered has of course been blown away, but one can still find many indications, such as broken cooking utensils, ashes, and animal-bones, that these mounds were used for no other purpose. In the mound shown in fig. 9 I found four fragments of pottery with ornamentation, seventeen fragments of plain pottery, and one hammer-head. Fig. 2, *c*, shows part of the rim of a vessel of brown clay with incised decoration. Fig. 10 shows part of the incurving rim of a dark-gray bowl

FIG. 9.—Excavating a mound.

with incised decoration, and fig. 11 a part of the flaring rim and neck of a dark-gray vessel with impressed ornamentation. Fig. 2, *a*, shows an impressed ornamentation and a hole through which a grass-rope handle could be strung.

I heard many reports of other findings on the range of hills west of Bellevue, and believe there can be no doubt that these hills were extensively used as a camping-ground by the Lucayans. Caves are found in great numbers on North Caicos, and with time and sufficient means, many important finds could be made in this neighborhood.

Another settlement, called Windsor, on Bottle creek, lies about a mile south of Bellevue. Two miles inland from this place I found another Lucayan clearing, but succeeded in finding only two ornamented sherds, both with diagonal incisions, and about eight fragments of plain earthenware. This clearing was on a hill, called Tommy Hill by the negroes, and one negress told me of finding a practically entire pot there at one time. She had, unfortunately,

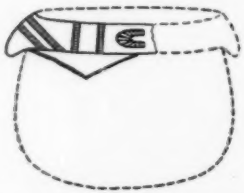


FIG. 10.—Fragment of rim of vessel.

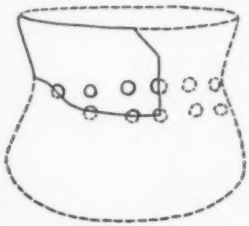
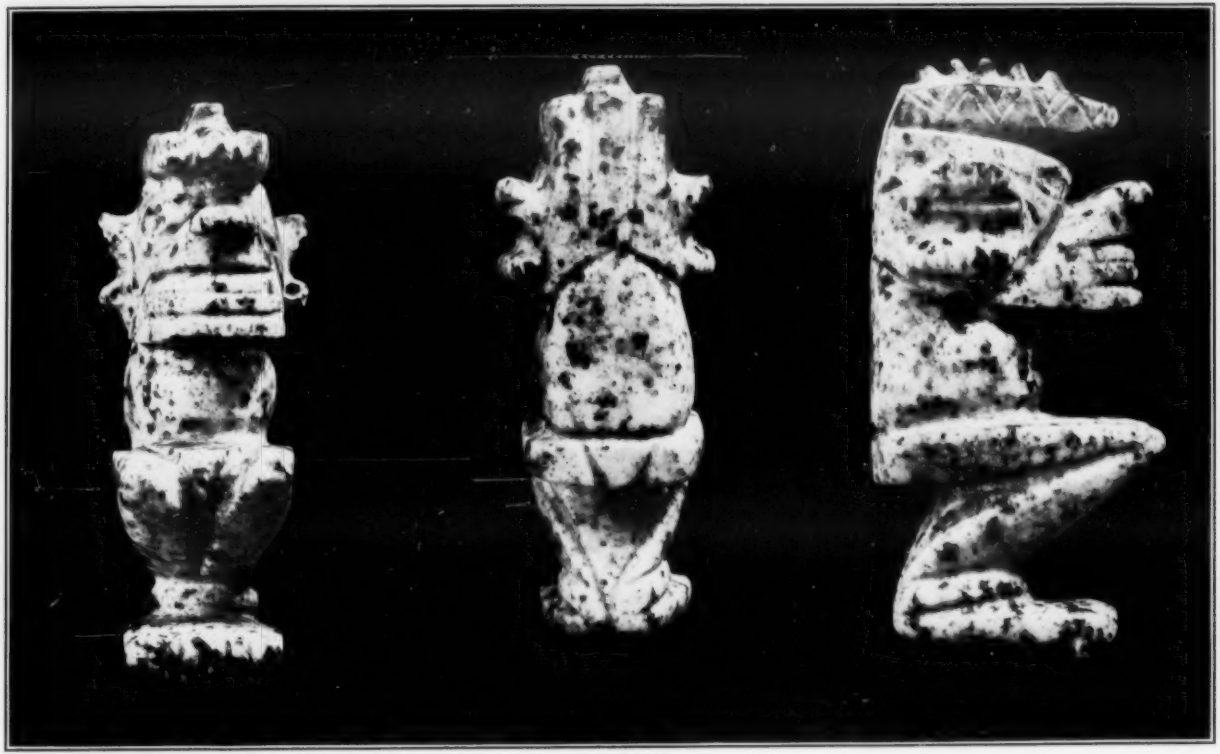


FIG. 11.—Fragment of rim and neck.

given this to her baby to play with, of course with the result that by the time I came it could no longer be found. I have noted throughout the Caicos islands that the present inhabitants take absolutely no interest in their predecessors, and beyond valuing the occasional stone implement they find as a preventive against thunder and lightning, of which they are mortally afraid, they attach no value whatsoever to any specimen of pottery found in their fields, and indeed seem to take delight in breaking up every piece they come across.

I heard further reports of pottery and implements found on the range of hills back of Bellevue and Windsor, particularly in the neighborhood of two settlements called Ready Money and Lockland. The negroes never go inland, as their fields are all within a



STONE IDOL FROM NORTH CAICOS

mile of Bottle creek and their fish is obtained from the sea; consequently, beyond speaking of caves (which they firmly believe are haunted) and mounds, they know nothing about the interior of North Caicos. The only settlement in the interior is called Kew, formerly the seat of government of the Caicos islands, with the ruins of official buildings, a large sugar-factory, and several plantations.

Kew.—As mentioned before, Kew is the most fertile spot on the Caicos islands, and the only place where one may find trees of any considerable size. The settlement consists of about fifty houses, with 300 inhabitants, the latter subsisting on corn and sweet potatoes. I could find no actual traces of Lucayan habitation around here, but acquired one fragment of a stone implement from an old negress. This implement is made of a species of dark-green jadeite, but I cannot determine to what use it was put.

Some few years ago a very interesting stone idol was found in the neighborhood of the Kew settlement. Plate VI shows three views of this idol, which I was not able to acquire, and for the photographs of which I am indebted to Mr J. S. Cameron, owner of the East Caicos sisal plantation. It is curious to note the pierced ears and the manner in which the feather headdress is represented.

Information points to the southern border of St Thomas' Hill, in the neighborhood of Sandy Point, as a likely place for finding Lucayan material; also to a place called Boston, northeast of Kew, where some caves are said to be, in the neighborhood of which several fragments of pottery have been found.

GRAND CAICOS ISLAND

Ferguson's Point.—There are two small caves at Ferguson's Point on the northern coast of Grand Caicos. These caves are easy of access, but I could find no evidence that they had been inhabited.

Conch Bar.—Conch Bar is another settlement on the northern coast of Grand Caicos, one mile west of Ferguson's Point. Here there are several caves that about thirty years ago were worked for the cave-earth they contained. It is evident that a tribe of Luca-

yans must have inhabited these regions, as I heard of several articles that had been found at the time of the guano digging. My guide told me that he knew of two small wooden stools, several skeletal remains (which were thrown away through the stupidity of the negroes), and some crude bedsteads made of forked sticks and boughs, being found there when the cave-earth was removed. The caves have been so thoroughly emptied of all the earth that was in them, leaving nothing but the bare rock, that I was able to find no material at all. These caves all have great beauty, are easy to enter, and must have been excellent shelters and dwellings, as it is no rare occurrence to find small fresh-water lakes in them. The Conch Bar caves are the largest ones on the Caicos islands and continue underground for great distances. The "Village Cave" has several mouths, and there is yet another cave close by called the "Orange Tree Cave."

From all indications I would again state that one should be able to find much material on the hills of several of the Caicos islands. While going about I continually heard of negroes finding potsherds on their occasional trips to the interior; but as I was not prepared to stay away from the coast during the night, having to sleep aboard the craft that was taking me around the islands, I could at the time not go more than four or five miles inland. With time and means it would be an easy matter to take two or three bearers and make a prolonged stay in the interior.

In the neighborhood of Conch Bar is a hill, called Dead Man's Skull Bluff, on the crest of which is another clearing. Here I found two sherds of ornamented pottery of no especial interest, and about ten fragments of plain earthenware. These fragments, together with some turtle-bones and ashes, were found in a kind of mound that was there.

Lorimers.—Lorimers is another settlement, three and a half miles inland from Big Landing on the northern coast of Grand Caicos. It is situated on Lorimers creek, dividing Grand Caicos and East Caicos, but this inlet is too shoal for navigation other than by rowboat. There is no northern mouth to Lorimers creek, as it really is only an inlet of Caicos Bank.

About four miles southwest of the Lorimer settlement, on the salina, and overgrown with guinea-grass during the greater part of the year, is found a large number of Indian mounds—not burial places as might be supposed, but evidently erected as a shelter against the water on the salina and as a foundation upon which to build huts. These mounds average three feet high, eight feet wide, and about twelve feet long, and are built of pieces of coral rock. As a rule the mounds are arranged in a crescent, with not more than six mounds in the group (fig. 12).

FIG. 12.—Lucayan mounds.

I found five fragments of ornamented pottery, one stone knife of very dark-green jadeite with a cutting edge and highly polished (fig. 3, *b*), and on which can be seen two small nicks by which to secure a lashing, and twelve unornamented potsherds on and around the mounds. One of these fragments is part of a large dark-brown bowl with incurving rim and impressed ornamentation. In this instance the ornamentation consists of a V-shaped figure which may or may not have been a crude effort to represent a bird (fig. 13). I have found the same type of ornamentation on other fragments at different places on the Caicos islands. Another sherd is a part of the rim of a light-brown bowl with stamped circular ornamentation (fig. 14).

In addition to these mounds on the salina flats, there are two hills, about two miles north of the Lorimer settlement, called Gamble Hill and Indian Hill. On both I found mounds, although, while there were some eight or ten on Gamble Hill, I could find only

FIG. 13.—Fragment of decorated pottery.

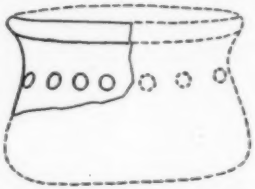


FIG. 14.—Sherd with circular decoration.

two in the brush on Indian Hill. Two ornamented sherds were found on Gamble Hill, one of which is of special interest, as the ornamentation consists of strips of clay laid over each other in regular pattern (fig. 15). I also found eight unmarked fragments here, while on Indian Hill I found three ornamented sherds and three plain fragments. These last six sherds are worthy of note as they plainly are of greater antiquity than any of the other pottery I have found on the Caicos islands, and the ornamentation of three of them is of the crudest, consisting merely of straight-line incisions without definite pattern. I also found one exceptionally large stone implement of green jadeite (fig. 3, *d*).

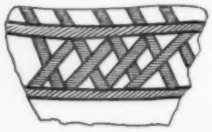


FIG. 15.—Sherd with pattern overlaid in clay.

There also are two caves within a mile of Lorimers, called Dark Night Well cave and Banana Tree cave. Although an old negro told me that he had once found an entire bowl in the Banana Tree cave, I found on going there that the mouth of the cave had fallen in and was closed, and that it would take two men an entire day to open it again. I could find no trace of previous habitation in the Dark Night Well cave.

Bambara.—This is another Grand Caicos settlement, within four miles of Lorimers. Report spoke of stone implements and pottery

fragments being found in this neighborhood, but as my time was limited I could not go there.

EAST CAICOS ISLAND

Jacksonville.—The settlement of Jacksonville, on the northern coast of East Caicos, now consists of a sisal plantation of 3,000 acres belonging to the East Caicos Sisal Company, Ltd. There are

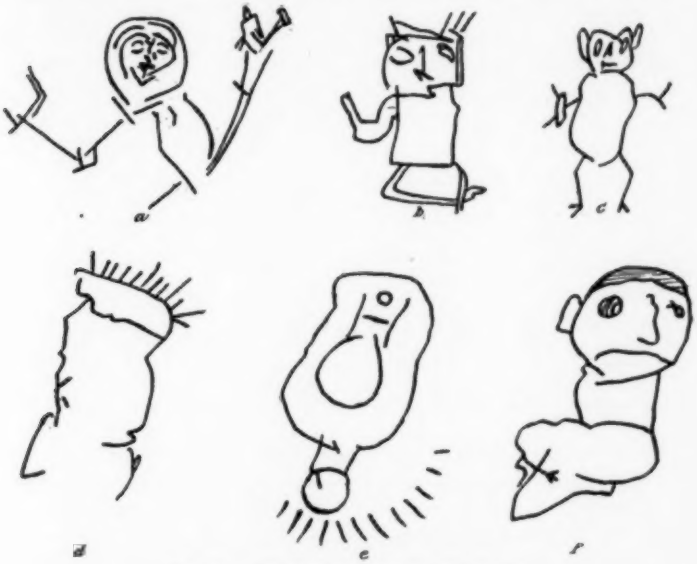


FIG. 16.—Petroglyphs in cave at Jacksonville.

several caves on this property, from which, about twenty years ago, large quantities of phosphates (cave-earth) were shipped, principally from what is known as the "Old No. 1" and the "No. 2" caves. It is said that when these excavations were commenced, several skeletons were found, also various artifacts, including a wooden stool and a platter. These two caves, however, have been so thoroughly emptied of earth that I could find nothing but bed-rock, and the same condition prevails in the "New No. 1" cave, from which also large quantities of cave-earth have been removed. It

was in this cave that I found unmistakable evidence that the main chamber had been used either as a place of worship or as a council-chamber. Various petroglyphs are found on the walls, notably those shown in the accompanying illustration (fig. 16), which are in the main chamber.

There also was a large stone in the main chamber which evidently had been cut into a rude semblance of a couch or altar; fig. 16, *d*, was cut on the roof of the cave directly over this stone. The carving of all these figures was partly obliterated, but figures *c* and *e* were most distinct. In addition to these petroglyphs there was a head, slightly larger than life-size, cut out in the rock of the main

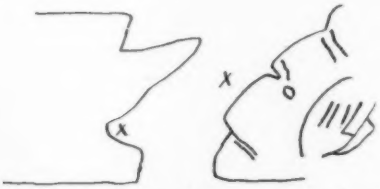


FIG. 17.—Profile of rock and gargoyle-like figure cut therein. (The head was carved at ×.)

FIG. 18.—Outline of stone fetish.

chamber, like a gargoyle (fig. 17). The drawings of the above petroglyphs are all about one-sixth of their actual size.

There is another cave on the Jacksonville property on Flamingo Hill. I could find nothing of interest in this cave; but this is scarcely to be wondered at, as the shaft of the cave runs down perpendicularly for about twenty feet. There are the usual mounds on Flamingo Hill, about eight in number, in one of which I found a small stone fetish (fig. 18), three small fragments of ornamented pottery of no especial interest, and a fragment of a stone implement of light-green jadeite (fig. 3, *a*).

Around and on another mound I found a small head belonging to the rim of a bowl (fig. 5, *c*); four sherds of ornamented pottery; about fifteen plain fragments; a jadeite chisel, highly polished, with a cutting edge; and a black flint scraper, also highly polished and with a cutting edge.

Another small pottery head (fig. 5, *b*), which has been lent to me, also was found on the Jacksonville property. This head evidently was meant to represent some animal, and I can not say whether the fact of its having no left eye is by accident or design. A small, highly polished jadeite scraper was also found here.

Kelly's Cave (*Sail Rock*).—According to report finds have been made here, but I had no opportunity to visit the spot.

Duck Pond Cave (*Goodshill Settlement*).—Here also pottery fragments and implements have been reported to occur. The Goodshill settlement is on the southwestern coast of East Caicos and about ten miles from Jacksonville.

161 CLIFTON AVENUE
NEWARK, NEW JERSEY

WAKONDAGI[1]

By ALICE C. FLETCHER

A SATISFACTORY analysis of the term *wakondagi* is not possible, but its meaning can be discerned by the manner in which the word is used by the Omaha. That it is related to the idea expressed by *Wakonda* is evident; it is also clear that it is not a synonym of that term. When *-gi* is used as a suffix, it has the general significance of "possession." But it is questionable whether *-gi* in the word *wakondagi* is a suffix; nevertheless the different ways in which the word is applied to actions seem to indicate that the idea of "possessed by" is to some extent implied in the term.

"Wakonda stands for the mysterious life power permeating all natural forms and forces and all phases of man's conscious life."[2] The Omaha also believe "that the power of Wakonda is akin to the directive force of which man is conscious within himself."[3] Observing the use of *wakondagi*, it is found that the term is applied to the first manifestation by a child of a new ability, as when it is first able to sit up, to creep, to walk, or to speak; all these actions are regarded as indications of the development within the child of an individual and independent power to act, and are spoken of as *wakondagi*. When the child walks for the first time, the act is called *mo^{n}thi^{n}* [to walk] *wakondagi*. When he utters his first word, that is designated as *I-e* [to speak] *wakondagi*. It is, however, only the first manifestation of an ability to walk or to speak that is thus spoken of; for, if later the child or the man, through sickness or accident, should lose the power to walk or to

[1] Owing to one of those inexplicable accidents with which most authors are familiar, the paragraphs pertaining to the subject of this brief paper were inadvertently omitted from the memoir on *The Omaha Tribe*, by the present writer and Mr Francis LaFlesche, published in the Twenty-seventh Annual Report of the Bureau of American Ethnology.

[2] *The Omaha Tribe*, op. cit., p. 597.

[3] Ibid., p. 600.

speak, when he recovered the use of his legs or his tongue, this ability would not be classed as *wakondagi*—it would not be regarded as the manifestation by the person of a new individual and independent power.

In this connection should be recalled the Omaha view concerning the relation of the life of a new-born infant to the cosmos,[1] as well as the Omaha conception of the child's cosmic relationship at a later stage, when it had shown the ability to walk and to speak, acts denominated as *wakondagi*, and had thus given proof that it was developing into something more than "a new life," was becoming capable of recognition as an individual to whom could be given a name and a place within the tribe.[2]

The application of the term *wakondagi* to actions considered as manifestations of individual ability in the child seems to favor the interpretation of the word as partaking of the idea implied by the suffix *-gi*, that is, the manifestation by the child of a power derived from Wakonda, and therefore something "possessed by" that mysterious power. But this interpretation should not be pressed too far, or the native thought would become merged and lost in a definition devised by the European mind. To keep true to the Omaha thought expressed by the word *wakondagi*, the interpretation must not be allowed to crystallize, but must be kept, so to speak, in its native fluid state.

Wakondagi is applied by the Omaha to mythical monsters—creatures that have been created by the effort of man's mind to make concrete certain vague conceptions of mysterious powers that lie beyond ordinary experience and ability. In this sense *wakondagi* becomes almost a synonym of "mystery." Akin to this use of the word is its application to strange water-animals whose appearance excited dread, as, when an alligator was first seen by the Omaha it was spoken of as *wakondagi*.

Descending in the scale as to the application of the word, it is to be noted that an excessive use of a physical power is designated as *wakondagi;* for instance, when a man has a habit of loud and rapid

[1] *The Omaha Tribe*, p. 115.

[2] Ibid., p. 117.

speech. So, too, when a person is a hard, almost an unmerciful, rider, he is said to be *shonge* [horse] *agthi*^{n} [rider] *wakondagi*. Even in these instances there remains a trace of the meaning already explained.

These uses of the term *wakondagi* seem to show that it represents the manifestation, either by action or by a strange physical appearance, of an invisible power that to the Omaha mind is related to the great mystery Wakonda, that which gives life and form, and permeates all things seen and known to man.

Among the cognate Osage tribe, *wakondagi* is often used in the same way and with a like meaning as the Omaha use the word *xube* [holy, mysterious, sacred], and it is also employed to designate those ceremonies and their paraphernalia that deal with mysteries and can affect human welfare. Men who treat diseases and observe occult practices are spoken of as *wakondagi*, and at the present day this term is applied to physicians of the white race.

WASHINGTON, D. C.

PROLEGOMENA TO THE STUDY OF THE SAN BLAS LANGUAGE OF PANAMÁ

By J. DYNELEY PRINCE

Introduction

THE *Túle*, or San Blas, Indians of Panamá number approximately fifty thousand souls, nearly all of whom live in the Panamanian province of Colon, which extends westward from the city of Colon. They seem to have a political organization, or a tribal federative system, as they have informed the writer that they recognize a head-chief, *sāgla*, whose function is to arbitrate between the lesser chieftains presiding over the various communities. These Indians will seldom if ever permit any whites within their territory farther than half a day's journey, in order that the strangers may not spend the night among them. This precaution, according to the Indians' own statement, is to avoid any possibility of blood mixture, of which they have a great horror. In fact, their dislike of the Panamanians is due largely to the mongrel character of that people, whom the San Blas look upon with contempt.

The San Blas disclaim all racial connection with other tribes, even with the Cuna of Darien, although the Cuna and San Blas dialects are very similar and the Cuna also call themselves *Tulé*. The language of the *Chuquenaque* tribe of Darien and that of the *Bayamo* clan on the Pacific side, the San Blas say, are quite different from their own, but this statement should be substantiated, when possible, by a study of the idioms in question.

Mr I. N. De Long of Cristobal in the American Zone was fortunate enough to enjoy the very unusual opportunity of accompanying an expedition undertaken by some priests to the San Blas city of San José de Nargana, where a missionary is tolerated. Here Mr De Long took the accompanying photographs (pls. VII–VIII), which admirably illustrate the physical characteristics of these Indians

and show them in their own home. He says in his letter to me of November 7, 1911:

"This town is 105 miles from Colon in a southerly (*scil.* westerly?) direction and is built upon one of a hundred small islands which are, for the most part, covered with cocoanut trees, presenting a very pretty view. The Indians live upon cocoanuts, tropical fruits, and other 'husks' not specified. The men come to Colon frequently, and there are evidences of advancing civilization, such as guns, cooking pots, etc. At the village store, they had several cans of foodstuffs and, of course, quite a supply of beer and spirits. This particular storekeeper drew attention to his place by means of an Edison phonograph! It seemed most strange to see the Indians gather about the instrument and chuckle over 'Has anybody here seen Kelly?'"

From the above, it appears that at least the frontier folk of the San Blas are beginning to become "Americanized," although even on their borders their rule against foreigners after dark still prevails.

The purpose of the present paper is to present to Americanists a preliminary study of this peculiar idiom which the writer believes is practically identical with the Cuna language of Darien, and distinctly, though distantly, connected with the Chibcha linguistic stock of Colombia. His reasons for this view are set forth at length in the following pages, which contain much matter never before published and which may prove of assistance to further philological work in this comparatively untouched field.

The material marked P. was obtained by the writer at Mount Hope, in the American Zone, from two intelligent San Blas Indians, Îna Mákchia and Ina Diséli, who were introduced to him through the kindness of Mr A. B. Shippee of Mount Hope. The rest of the San Blas vocabulary was contributed, without philological comment, by Mrs Eleanor Yorke Bell of Colon, who has long had an interest in these Indians, having published in the *Smithsonian Report* for 1909 a description of the manners and customs of the San Blas, with photographs.

Part I

Phonetics and Morphology

Since a large part of the San Blas vocabulary, on which this omparative study is based, comes from the kind contribution of

STREET SCENE IN SAN JOSE DE NARGANA

Several families live in one house.

CLOSE VIEW OF WOMEN'S COSTUME

Note the nose-rings

Mrs Bell, the system followed in noting the San Blas words in the grammatical sketch and glossary has necessarily been to observe her use of the English values of the consonants (*c; g* always hard) and of the Italian vowels (except *ea* = *i* and *oo* = *û*). The vowels in San Blas are clearly pronounced and are rarely indeterminate, as, for example, in the North American Algonquian dialects, so that her method is not so defective with regard to the vowels as might appear to the phonetician at first sight. The peculiar nature of some of the consonants as observed by me is explained in the following Table of Phonetics, which should be carefully read before proceeding to the study of the Glossary (note especially the Tenues and sub *TS*; *CH*).

The Cuna material has been gathered from A. L. Pinart, *Vocabulario Castellano-Cuna*, Paris, 1890, and also from a manuscript catechism in the Cuna language by Fr. Pedro de Llisa, *Pequeño Catecismo Cristiano*, Panamá, 1884. These Cuna words cited by me are all noted in the Spanish system of orthography. The reader will observe, however, that the *j* is the Spanish guttural *j*, while the *z* is the South American Spanish hard *s* and not the lisped Castilian *th*. The numerals in old Cuna in English notation in the following comparative table of numerals are taken from Lionel Wafer, *A New Voyage and Description of the Isthmus of America*," 1500, reprinted, and re-edited by George Parker Winship, Cleveland, 1903.

The Chibcha material has been culled from E. Uricoechea, *Gramática de la Lengua Chibcha*, Paris, 1871, in which work the Spanish notation is also used, with the exceptions that the *z* = harsh *ts* and the *x* = *ks* and not the guttural of the older Castilian. The Chibcha *y* = the English short *i* in *pin*.

The abbreviations SB. = San Blas; C. = Cuna; CH. = Chibcha; P. = Prince; B. = Bell; n., nn. = the numbered notes to the Glossary.

Table of San Blas Phonetics

Apocope of *s*, apparently in SB. *sacke* = C. *cael* 'net'; n. 40; of *g* in SB. *oowa* = C. *huguá* = CH. *gua* 'fish.'

Aspirate in SB. *i'ti* 'he, it' and similarly in SB. *eckto* = C. *ito*, the aspirate being represented by the *-ck-*; cf. nn. 26; 55. We find a prefixed aspirate in SB. *hogur* = C. *ucúr* 'hungry; hunger'; cf. n. 30; also in C. *huguá* = CH. *gua* = SB. *oowa* = 'fish.'

For the change of aspirate to sibilant, see *CH-S* to *J*.

B-G; see *G-B*.

B-P; see Tenues.

B-V: SB. *ogovah* = C. *ocob* 'cocoanut'; SB. *n-evah* 'air'; lit., 'sky, day,' and SB. pl. *ne evigana* 'the days' = C. *ipé* and also = SB. *eba* 'sun.'

C-G see *G-K*; and on Tenues.

C(K)-P: SB. *cockéno* = *curqŭína* CH. *pcuapcua* 'hat,' probably all from allied stems; see Metathesis.

CH-N; see *N-CH*.

CH-S to aspirated *J* (= *kh*): SB. *suára* = C. *choána* = CH. *ja* (= *kha*) 'wood.'

CH-S; cf. *S-CH*.

CH-T: SB. *atchúo* = C. *achú* = CH. *to* 'dog.'

CH-TS; see *TS-CH*.

CH constant: SB. *chichígua* = C. *chichíli* 'negro.'

D-G: SB. *budoquizah* = CH. *bgyscua* 'die.'

D-N: SB. *pudua* = C. *punúa* 'wind.'

D-T; see = Tenues.

E for *A*: C. *talmal* and *telmal* 'sea' (see Sail, Sea). Merely a slight oversight on the part of Pinart.

F-T: SB. *fodohwey* = C. *totae* 'play.' I am doubtful as to the SB. form (B.).

G-B: SB. *negssla* = C. *nabsa* 'earth'; SB. *túlagwéna* = C. *tulábuena* 'twenty.'

G-D; see *D-G*.

G-K; see Tenues.

GUA-CU: C. *guápin* = CH. = *cubun* 'language.'

GUE-HWE; SB. *pohwey* = C. *pogue* 'cry.'

HWE-GUE; see *GUE-HWE*.

J-Y; SB. *japane*(*y*) = C. *yapáne* 'smell.'

K-G; see Tenues.

K-T; SB. *kewalo* = C. *tiguála* 'river.' Perhaps an error on the part of B. (see n. 45), although *k-t* is a common phonetic change; cf. Canadian French *moiquié* for *moitié* 'half.'

L omitted in SB. *cunai* = C. *cunáli*.

L-N: SB. *quiley* = C. *quinégal* 'dance.' Note SB. *negssla* = C. *nábsa* 'earth' with the insert *l*.

Metathesis is of not infrequent occurrence between the dialects; thus, SB. (*s*)*acke* = *caet* 'net'; n. 40. Note also SB. *kŭg'le* = C. *cublégue* = CH. *cuhupca* 'seven,' and SB. *cowagai* = C. *quecújal* 'sick'; nn. 49–50. In the latter instance, the metathesis is *c*(*k*)-*w*-*g* = *qu*(*k*)-*c*(*k*)-*j* (= *h* here, equivalent to SB. *w*).

N-CH; SB. *ni* = C. *ni* = CH. *chie* 'moon.' Doubtful (see n. 38). The *n* here is probably the demonstrative element.

N- insert: SB. *súnmacke* = C. *chúmaque* 'speak'; also SB. *múnticke* = C. *mútiqui* 'night.'

N-L; see *L-N*.

N-M; see Verb: *am-pe-takse* = *an-pe-takse*. *N-M* under the influence of the following labial.

AN UNUSUAL GROUP, OBTAINED WITH DIFFICULTY

SAN BLAS GROUP

The men dress in European style, but the women retain the native costume. Note the albino woman on the right.

N-R; see *R-N*.

Palatalization; see *J-Y*.

R omitted in SB. *cockeno* = C. *curquína* 'hat'; possibly an inadvertence of B., but note SB. *carbey* = C. *capié* 'sleep' and see n. 50.

R-N: SB. *suára* = C. *choána* 'wood.'

S apocopated; see Apocope.

S-CH; perhaps the most common interchange between SB. and C. For full examples, see n. 3. The sibilants *S-CH* are highly palatalized in these languages = *tsy* which appears both for *S* and *CH*. See *TS-CH*.

S-T; SB. *iti* = C. *ati* = CH. *sisy* 'he, it'; SB. *ti* = C. *ti* = CH. *sie* 'water.'

T-CH; see *CH-T*.

Tenues. The most striking feature of the SB. phonetic system is the absolutely voiceless character of the tenues *k(c)-p-t*, which are pronounced with no aspiration whatever. This explains why Mrs Bell in SB. and Pinart in C. write *k(c)-p-t* and *g-b-d* indiscriminately, representing the pure unaspirated tenues. In the following texts every *k-g*; *p-b*; *t-d* are *k-p-t*.

T-F; see *F-T*.

T-S; see *S-T*.

TS-CH; SB. *sipúgo* and *tsipúgua* 'white, he is white' = C. *tsipúgua*.

TS-S; see *S-CH*.

V-B; see *B-V*.

X-T; see SB. *ti* = C. *ti* = CH. *xie* 'water.' The CH. *x* = *ks*.

Grammatical Notes

The SB. noun appears to be indeclinable, but the plural is formed by the ending *-gan, -gana, -cana*, as *macherédi* 'man,' but *macherégan* 'men'; *óme* 'woman'; *ómecána* 'women'; *évi-gána* 'days.' The plural ending of the pronouns, however, is *-mal, mala* (also of the noun with pronominal prefixes), as *pe* 'thou'; pl. *pe-mala* 'you'; *íti; ati* 'he, it'; pl. *ítimala, atmala* 'they'; *an-ula-mala* 'my canoes.' Both these endings are the same in Cuna, as *chapi* 'tree'; pl. *chapigana; ati* 'he'; pl. *amal* 'they' (Pinart, pp. 4–5). Nouns in SB. may be formed by the prefix *ood-, oot-*, as *ood-boti* 'boat'; *ood-cacolah* 'canoe'; *ootmola* 'sail.' The ending *-edi* is used in both nouns and adjectives; *macherédi* 'man'; *serrédi* 'old'; nn. 42; 62.

The demonstrative pronominal element which also serves as the definite article is *ne-*, as *ne evi-gana* 'the days'; *ne-gseacona* 'the lakes' (the *-cona* (B.) probably = the pl. *-gana*). This demonstrative *n*-element is also apparently found in verbs, as *necktosah* 'hear'; nn. 27; 55.

The personal pronouns in SB., C., and CH. are as follows (P):

	SB.	C.	CH.
I	*ani; an-*	*ani*	*hycha*
Thou	*pe* (*be*)	*pe; be*	*mue*

He, it	*i'ti; ati*	*ati*	*sisy*
She	*iti; i'ti; ati; ome-*	*ati*	*sisy*
We	*anmala; ampōgua; ampōgpela* (dual)	*nen; nenmal*	*chie*
You	*pemala; pepōgua; pepōgpela* (dual)	*pemal*	*mie*
They	*i'timala; atmala; pela; pelakwop; pelakwoppa(?)* SB. *pela* = C. *ambali* of general pl. force. See Mountain.	*amal*	*sysy*

In SB. these pronouns are used as follows with the verb, according to the data supplied to me by Îna Mákchia and Îna Diséli at Mount Hope (see Introduction). Alternate forms admitted by these Indians are in parentheses.

Tákse 'see' = (P.).

	Me	Thee	Him; it	Her
I		*am-pe-takse*	*an-takse* *an-iti-takse*	*an-ome-takse* *am-puna-takse*
Thou	*pe-an-takse* *p-an-takse*		*pe-takse* *pe-iti-takse*	*pe-ome-takse* *pe-puna-takse*
He	*iti-an-takse* *ati-an-takse*	*iti-pe-takse* *ati-pe-takse*	*iti-takse*	(*iti-ome-takse*) (*iti-puna-takse*)
She	*ome-an-takse* *puna-an-takse*	*ome-pe-takse* *puna-pe-takse*	*ome-takse* *puna-takse*	(*ome-takse-ome*) (*puna-takse-puna*)
We		*ampōgpela-pe-takse* (*anmala-pe-takse*)	*ampogua-iti-takse* *anmala-iti-takse*	*ampog-ome-takse* *anmala-ome-takse*
You	*pemala-an-takse*		*pemala-iti-pe-takse*	*pemala-ome-pe-takse*
They	*atmal-an-takse* *pela-an-takse*	*atmal-pe-takse* *pela-pe-takse*	*atmala-itakse-iti* *pela-takse-iti*	*atmala-takse-ome* *pela-takse-ome*

	Us	You	Them
I		*pepōgpela-am-petakse* *pemala-am-pe-takse*	*an-takse-(mala)*
Thou	*pe-an-takse-(mala)* *p-an-takse-(mala)*		*pe-takse-(mala)*
He	*iti-an-takse-(mala)* *ati-an-takse-(mala)*	*iti-pe-takse-pepogua* 'he s. you two,' or *-pemală* 'you,' pl.	*iti-takse-(mala)*

She	*ome-an-takse-(mala)*	*ome-pe-takse-pepogua* 'she s. you two,' or *-pemala*, pl.	*ome-takse-(mala)*
We		*ampōgua (anmala)-am-pe-takse-(mala)*	*ampōgua (anmala)-an-takse-(amala)*
You	*pemala-an-takse-(mala)*		*pemala-takse-(mala)* *pelakwop-an-takse(?)*
They	*(atmal-an-takse-mala)* *pela-an-takse-(mala)*	*(atmal-pe-takse-mala)* *pela-pe-takse-(mala)*	*pela-takse-amala* *pelakwoppa-an-takse-mala(?)*

The pronominal incorporation in SB. is much simpler than that seen, for example, in Algonquian. In SB., the subject usually has the first place, the object second, and the verbal element comes last: thus, *am*(= *an*)*-pe-takse* 'I thee see'; *pe-an-takse* 'thou me seest,' etc. Yet this is not invariable, as they say: *pela-takse-iti* 'they see him,' with the object last, and *pepōgpela am-pe-takse* 'I see you,' with objective prolepsis. It will be observed that there is no such genuine assimilation of elements as appears in most of the languages of North America. The pronominal elements are really not indeterminate at all, as they are quite separable from the verb-stem and vary only insignificantly from the independent pronouns. In this respect, SB. is rather isolating than polysynthetic, so far as its verbal system is concerned. This isolating character of the idiom is more apparent when we look at such phrases as *pi*(*pe*)*-abe-neca* 'where (*abe*) do you live' = *neca* 'house,' the stem being used verbally here. This *abe* is probable cognate with C. *pia*, *piaje* 'where'; cf. also *pi*(*pe*)*-abe-tani* 'whence come you?'

As to grammatical gender there is none at all, although a 'she' and 'her' form appear above. I have given this, simply because my Indians informed me that they use the words for 'woman' = *ome* and *puna* pronominally whenever it becomes necessary to specify or emphasize a feminine meaning.

The use of the pronouns as possessive prefixes emphasizes still further the isolating character of the idiom; viz.,

an-ulu 'my canoe'	*an-ulu-mala* 'my canoes'	*anmal-ulu* 'our canoe'	*anmal-ulu-mala* 'our canoes'
pe-ulu 'thy canoe'	*pe-ulu-mala* 'thy canoes'	*pemal-ulu* 'your canoe'	etc.

i'ti-ulu	etc.	*i'timal-ulu*
'his, her canoe'		'their canoe'

In C. the same system prevails, as *an-moli* 'my horse'; *pe-moli* 'thy horse,' etc.; but Pinart (p. 5) gives the special possessive forms *angati-* 'my'; *pegati-* 'thy'; *a, atigati, agati* 'his'; *nengati* 'our'; *pemalgati* or *pemal* 'your'; *amalgati* or *amal* 'their.'

My material does not extend as yet sufficiently to enable me to state anything definitely as to the tense-system of the verbs. It seems, however, to resemble that of the C., which uses prefixes, reduplication, and *Ablaut* to distinguish between its tenses; cf. Pinart, pp. 5–6: *an nao* 'I go'; *an nanedi* 'I was going'; *an negua* 'I have gone'; *an-queb-nao* 'I will go.' In SB. the present may be used for the future, as *Sēk am-pe-takse Colon-gini* 'Jack, I will see you in Colon.'

I note in SB., moreover, that *-gua* seems to indicate a predicate, as *sichígwa* 'black, he is black'; *tsipúgua* 'white, he is white'; *ichaguagua* 'he hates'; *punalo̱gua* 'girl, she is a girl,' etc. This is the same element seen in C. *tegua* 'who?', and also in CH. *gue*, as *ze gue* 'I am'; *mue gue* 'thou art,' etc.

Reduplication also plays some part in SB., as *nane(y)* 'walk' = the same stem as C. *nao* 'go'; seen also in C. *manégal* 'walk' = CH. *nyn*. The infixed *-n-* appears in such combinations as *avaganecktoga* 'feel,' q. v. Note that 'taste' = *ecktoge*, so that *-n-* may be the prepositional element = 'in'(?). Cf., however, the demonstrative *-n-* seen in verbs, as *necktosah* 'hear.'

The SB. numerals (P.) are as follows, given in comparison with the C. and the Old Cuna from Wafer (see above), pp. 167–168. It will be observed that the Chibcha numerals also given below differ perceptibly from the SB.-C.

	SB.	C.	Old C.	CH.
One	*kwénchakwa*	*cuénchique*	*conjugo*	*ata*
Two	*pōgua*	*pocua*	*poquah*	*boza*
Three	*pāqua* (*pāgua*)	*pagua*	*pauquah*	*mica*
Four	*pakégua*	*paquégua*	*pakequah*	*muyhica*
Five	*atále*	*atále*	*eterrah*	*hyzca*
Six	*nerkwa*	*nercua* / *nerícua*	*indricah*	*ta*

Seven	*kũg'le*	*cublégue*	*coogolah*	*cuhupca*
Eight	*pábaka*	*pabacá*	*paukopah*	*suhuza*
Nine	*pakébaka*	*paquébágue*	*pakekopah*	*aca*
Ten	*ambégi*	*ambégui*	*anivego* (sic!)	*ubchihica*
Eleven	*ambégi kaká kwenchakwa* etc.	*ambégui cacá cuenchique* etc.	*anivego conjugo* etc.	
Twenty	*túlagwéna*	*tulábuena*	*toolaboguah*	
Thirty	*tulágwena-kaká-ambégi*	*tulábuena cacá ambégui*		
Forty	*túlabógua* (*-pōqua*)	*tulápocua*		
Fifty	*túlabógua-kaká-ambégi*	*tulápocua-cacá-ambégui*		
Sixty	*túlapágua*	*tulápagua*		
Seventy	*túlapágua-kaká-ambégi*	*tulápagua-cacá-ambégui*		
Eighty	*túlapakégua*	*tulápaquégua*		
Ninety	*túlapakégua-kaká-ambégi*	*tulápaquégua-cacá-ambégui*		
Hundred	*túlatále* = *tula-atále*	*tulá atále*		

The SB. numerals, like the adjectives, follow the noun, as: *macherédi pōqua* 'two men'; *puna poqua* 'two women'; *mériki sipúgo* 'white American'; *an-ulu-mala pāqua* 'my three canoes,' etc.

A study of the above table reveals the following facts. A reduplication of the *g*(*k*)- element appears in the SB.-C. *pakégua-paquégua* 'four,' a lengthening of SB.-C. *pāqua-pagua* 'three' and in SB.-C. *pakébaka-páquébague* 'nine,' a lengthening of SB.-C. *pábaka-pabacá* 'eight.' This lengthening, like the similar phenomenon in CH., seems to add *one* to the numeral thus treated (see just below).

Old C. *anivego* must be an error for *amvego* = SB.-C. *ambégi-ambégui* 'ten.' Note also the interchange between *l* and *r* in SB.-C. *atále* = Old C. *eterrah*.

SB. *kũg'le* 'seven' is identical with old C. *coogolah*, whereas C. *cublégue* 'seven' = CH. *cuhupca* and are apparent metatheses of the same stem. Note also the apparent metathesis in Old C. *pakekopah* 'nine' = SB.-C. *pakébaka* = *paquébague*, and see nn. 49–50; or is *pakekopah* an error of Wafer's?

Above nineteen, the SB.-C. numerals run by adding to the score = *túlagwéna* 'twenty'; thus, 'thirty' = a score and ten; 'forty' = two scores; 'fifty' = two scores and ten, etc.

Note in CH. *mica* 'three' and its lengthened form *muyhica* 'four' that the distraction seems to add *one* to the original numeral, like the lengthening in SB.-C. mentioned just above.

CH. *boza* 'two' is probably cognate with SB.-C. *pōqua-pocua*, while CH. *aca* 'nine' seems cognate with the final *-ka-gue*-element in SB.-C. *pakébaka-paquébague*.

Prepositional construction is expressed by postpositive particles, as *Colon-gini* 'in Colon'; *an-ulu-gini* 'in my canoe,' etc. Cf. C. *necaguin* 'in the house,' etc.

The Affinity between SB.-C. and CH.

The practical identity of the SB. with the C. will be seen and appreciated from the above brief phonetic and morphological sketch and will be further demonstrated in the following comparative glossary. As to the relationship between this Isthmian group and the Chibcha family of Colombia, this is not so apparent at first sight, and yet, a comparison of the following resemblances should satisfy the philologist that the SB.-C. and the CH. must either have been originally the same at base, or else, at some ancient period, have stood so closely in connection as to influence each other. It is true that the pronouns and numerals differ widely between the two stocks, still, even at these points, a careful comparison seems to reveal a radical similarity in at least two instances. Thus, in CH. the 2 p. *mue*, pl. *mie* 'thou, you,' is probably the same stem as the SB.-C. *pe*(*be*). There is a very evident relationship between SB.-C. *i'ti*, *ati* 'he, she' and CH. *sisy*, with the not unusual change between *t* and *s*; cf. n. 26 and compare the familiar Ashkenāzi pronunciation of the Hebrew consonant *Tav* as *Sav* after vowels. This is owing to the degeneration of the soft *t* = *th* into the sibilant. As to the other pronouns, the CH. *hycha* 'I' and *chie* 'we' undoubtedly contain the same *ch*-element of the 1 p., changed in CH. to *ze-* in the verbal system. This seems to differ radically from the *n*-element of the SB.-C. first person, but even here there may be a

connection, as changes between *n* and a sibilant are noted in Chinese (cf. Prince, *Materials for a Sumerian Lexicon*, p. xii and see this article, n. 38). Note also that the CH. verbal element *gue* is clearly cognate with the SB. predicate *-gua* (see above).

Table of Affinities

See in glossary s.v. the following words:

Air, bad, bird, boy, buy, bring, die, father, fish, give, hat, he, in, it, lake, language, man, moon, net, nine, rain, sad, send, seven, sleep, thou, three, tree, two, walk, water, wood.

Part II

Comparative Glossary

	San Blas	Cuna	Chibcha
Air	*nevah*[14]		*fiba*
American	*meriki sipúgo* (P.) 'American white man.'		
And	*kaká* (see Numerals)	*cacá*	
Animal	*achosapopaliti*[1]	*ib*	
Bad	*obah*[2]	√*ist*[a]*r*	*achuenza* 'bad thing
Belong	*pi-abe-nega* ' Where do you b.?' Contains *nega* 'house,' b. v.		
Big man	*tuletumadi* (P.)	*quáyártan*	
Bird	*siquey*[3]	*chicúi*[3]	*sue*[3]; *sue guana*
Bite	*cunai*[4]	*cunáli*[4]	
Black	*sichigwa*[3] (P.)	*chichíti*[3]	
See Negro.			
Boat	*oodboti*[5]		
Boy	*machéa* (P.); *machígua*[6] P.	*máchiguá*[6]	*guasgua*[6] *cha*
Bring	*sadage*[3]	*chetáque*[3]	
Buy	*packey*[7]		*bcuscua*[7]
Canoe	*oodcacolah*[5]; *ulu*[8]		
Carry	*sedey*[3]	*chetáque*[3]	*zemoscua; bsoscua*
Chief	*sägla*	*urunía*	
Clothes	*mola*[8]	*yóque*	
See Sail.			
Cocoanut	*ogovah*[9]	*ocob*[9]	

Cold	*temperipa*[10]	*tampe*[10]	*anyan mague; nyco hichuc aguecua; hichupcua.*
Come	*an-eksenai an-ulu-gini* (P.) 'I come in my canoe'; *pi-abe-tani*[11] 'whence come you.'	*taníque*[11]	
Cry	*pohwey*[12]	*poguí*[12]	*zeconsuca*
Cut	*sickey*[3]	*chiglileja*[2]	
Dance	*quiley*[13]	*quinégal*[13]	*bzahanasuca; bcuyscua*[13]
Dark	*secsequa*[3]	*chichíti*[3]	
Days	*ne*[14] *evigana*	*ipá*	*sua* 'sun'
Devil	*nian*	*níya*	*guahayoque*
Die	*budoquizah*[15]	*purque*[15]; *oguigúgal*	*bgyscua*[15]
Dog	*atchúo*[16]	*achú*[16]	*to*[16]
Drink	*cobey*[17]	*copé*[17]	*biohotysuca; maiota;* = $\sqrt{}$*iotu*
Dry	*yinagua*[17]	*tiná*[17]	*buchua*
Eat	*cuney*	*cúne*	*bsoscua*
Earth	*negssla*[18]	*nábsa*[18]	*hicha* (element); *quica* (country)
Eight	*pábaka*[19] (P.)	*pabacá*[19]	*suhuza*
Eighty	*túlapakégua* (P.)	*tulápaquégua*	
Father	*beber; pabá* (P.)	*patiri* 'priest'; *pap*	*paba*
Feel	*avaganeckloga* = 'taste in feeling'; see Taste, Healthy, How.		
Fifty	*tulabóguakákambégi*[20] (P.)	*tulapocua-cacá-ambégui*[20]	
Fish	*oowa*[21]	*hugúa*[21]	*gua*[21]
Five	*atále* (P.)	*atále*	*hyzca*
Food	*sapeturpa*	*onó*	
Foreigner	*wága* (P.)		
See Spaniard.			
Forty	*túlabógua* (P.)	*tulápocua*	
Four	*pakégua* (P.)	*paquégua*	*muyhica*
Girl	*panalogo; punalógua* (P.)	*puná*	*guasgua fucha*
See Woman.			
Give	*ookey*[22]; [47]	*uisutague* 'g. me.'	*hocmuyscua*[22]
God	*Beber*	*Dios; Quilulele*[23]	
See Father.			
Good	*newedi; nuwédi*[24]; [62] (P.)	*nuhueti*	*cho* 'a g. thing.'
Good-bye	*tĕgimala*		

Hammock	*catchi; kochi* (P.)	*cachí*	
Happy	*naperijitoge*		
Hat	*cockéno*[25]	*curqüína*[25]	*pcuapcua*[25]
Hate	*ichaguagua*		
He	*iti; s'ti*[26]; *ati*	*ati*[26]	*sisy*[26]
Healthy	*avacanuedi* = good in feeling; see Feel, Good, How.	*nuhuer*	*chogue* 'he is well.'
Hear	*necktosah*[27] [45]	*itó*[27]	*muypcuasuca*
Help	*bendaki*		
Her, hers; see Pronouns.			
His; see Pronouns.			
Hit	*nacksah*		
Hold	*cahey*		
Horse	*móli* (P.)[28]	*molícabái*[28]	
Hot	*huerpa*		*chituc aguene* 'be h.'
House	*nega*[29] [37]; *neca*	*neca*[29]	
See Marry, Belong.			
How	*igi pe av'gana* (P.) 'how do you do?' The stem is the same as in (*avaga*)*necktoga;* see Taste, Healthy.	*igui* 'how,' but *pe-abogandi pulegua* 'how do you do?'	
Hundred	*tulatále* (P.) 'five twenties'	*tulá atále*	
Hungry	*hogurapa*[30]	*ucúr*[30] 'hunger'	*chahac* 'be h.'; *achansuca;* ✓*cha*
I	*áni, an-* (P.)	*ani*	*hycha*
In	*-gíni* (postposition)	*-guin*	*-n*
Indian	*túle;* lit. 'a live person'; see Live; *an-tule-gatawízi* 'do you speak San Blas language?'	*tulé* 'Cuna'	
It	*s'ti*[26]	*ati*[26]	*sisy*[26]
Jack	*Sēk*		
Lakes	*negseacona*[31]	*matá*	*xiua*[31]
Language; see Indian.		*guápin*[32]	*cubun*[32]
Laugh	*alley*[33]	*alepilár*[33]	*zegyhuasuca*
Leaf	*sapécah*[3]	*chapíca*[3]	
Lie	*cackunsai*	*cacána* (noun)	
Light (adj.)	*negmegua; canerukai*	*talál*	
Little; see Small.	*itségua*[34] 'a little'	*ichégua*[34]	

Live	*túle*	*tulégua*	*opcuabiza* alive
See Belong.			
Love	*abeyeh*[35]	*chabúet*[35]	*blyzisuca; atyzin*
Man	*macherédi*[36] [62] (P.)	*mastól*[36]	*muysca*[36]
Marry	*omenecuwey*[37]		*isahaoacbgascua*
See Woman.			
Meat	*sanah*[3]	*chana*[3]	
Men	*macherégan* (P.)		
Metal	*esnumoderste*		
Moon	*ni*[38]	*ni*[38]	*chie*[38]
Mother	*nana*	*naná*	
Mountain	*yahalah*	*chapúr*, but *yalá-gambáli* 'on the high mountains,' with pl. *-ambali*.	
Music	*calnamachi*		
My; see Pronouns.			
Negro	*chichígua*[39] (P.)	*chichiti*[39]	
Net	*sacke*[40]	*hugúa caet*[40] 'fish-net'	*iaia*[40] 'fish-net' *quyne* 'hunting net'
Night	*múnticke*[41]	*mútiqui*[41]	*za*
Nine	*pakébaka* (P.)	*paquébágue*	*aca*
Ninety	*túlapakéguakákambégi* (P.)	*tulá-paquégua-cacá-ambégui*	
Old	*serredi*[42]	*patóguit*	*tybara; tybacha saca* 'old thing'
One	*kwénchakwa* (P.)	*cuénchique;* = *qüe(?)*	*ata*
Our; see Pronouns.			
Paddle	*camiya*	*cáme*	
Panamanian	*wága sichígwa* 'black foreigner' (P.)		
Play	*fodokwey*[43]	*tolaé*[43]	
Quick	*quaequah*		
Rain	*tiwía*[44]	*ti; tiguíe, tiguai*[44]	*siu*[44]
Rest	*opunowey*	*ulúcus*	
River	*kewalo*[45]	*ti; tigúala*	*xie, sie*
Sad	*oodwey*	*itorquesi*	*apquyquy; asucan mague* 'sad person'
San Blas Indian; see Indian.			
Sail	*oolmola; ulu*[5] [8]	*talmál molá*	
Sea	*telmalah*[8]	*telmál*[8]	
See	*tágsah*[46]; *takse* (P.)	*atác*[46]	*zemistysuca* / *zemihistysuca*
Sell	*ookey*[47]	*uquégal*[47]	*zemutysuca*

Send	*parmile(y)*[48]		*blynsuca*[48]
Seven	*kúg'le* (P.)[49]	*cublégua*[49]	*cuhupca*[49]
Seventy	*túlapáguakakámbégi* (P.)	*tulá-págua-cacá-ambégui*	
She	*í ti*[50]; often pure fem. *ome-*; see Verb (P.)	*ati*[50]	*sisy*[50]
Shore	*kakah*		
Sick	*cowagai*[50]	*quecújal*[50]	*iusuca*
Sing	*namackey*	*namáque*	
Six	*nérkwa* (P.)	*nercua; nericua*	*ta*
Sixty	*túlapāgua* (P.)	*tulápagua*	
Sleep	*carbey*[50]	*capié*	*zequybysuca; aquybu*
Slow	*pinagua*		
Small	*peckpequa*	*tológua; cheni*	*ynguezunga* 'a s. thing'
Smell (vb)	*japane(y)*[51]	*yapáne*[51]	
Snake	*nágpey*	*nágpe*	*muyso aquycaque*
Spaniard	*wāga sipúgo*[52] (P.) 'white foreigner'		
Speak: 'you s. Indian' *pe-túle-gāta-wīzi;* 'I speak' *ān-wīzi*			
Spear	*eswalah*		
Star	*nesquao*[53]	*nicheni*[53]	*fagua*[53]
Steal	*atiusai*		
Strike	*nacksah*		
Strong	*canarapoh*		*achihinzan maque* 'a s. person'
Sun	*eba*[54]; *tada*	*ipé*[54]; *tata*	*sua*
Swim	*tomomackey*		*ihyzagoscua*
Take	*suey*		*cambzascua; cambquyscua*
Talk (see Speak) 'you t. to me'	*súnmackey*[3] *pundatsógi*	*chúmaque*	*zecubunsuca;* see Language
Taste	*ecktoge*[55]	*itóguelil*[55]	
Ten	*ambégi* (P.)	*ambégui*	*ubchihica*
Their; see Pronouns.			
They	*ātmála*[56] (P.); *pela*	*amal*[56]	*sysy*
Thirty	*túlagwénakakámbégi* (P.)	*tulábuena-cacá-ambégui*	
Thou	*pe, be* (P.)	*pe, be*	*mue*
Three	*pāgua* (P.)	*pagua*	*mica*
Throw	*modey*[57]	*tarmétagal*[57]	
Thy; see Pronouns.			
Tiger	*atchuo patparti*[58]	*purliquét*[58] *imiá*	

Tree	*sapewala*[3] [59]	*chapi*[3]; *gual*[59]	*quye*
Turtle	*jawóka*	*monó*	
Two	*pōqua* (P.)	*pocua*	*boza*
Twenty	*tulágwena* (P.)	*tulábuena*	
Walk	*nane(y)*[60]	*manégal*[60]	*inynsuca*[60]
Water	*ti*[26]	*ti*[26]	*sie, xie*[26]
We	*āmpōgua* (P.)[61]; *anmala*	*nen; nenmal*[61]	*chie*[61]
Weak	*nolowah*		
Well (adv.)	*nuweái*[34] [62] (P.)	*nuhueti*[34] [62]	
Wet	*waragua*[63]	*gualaguá*[63]	*iotuc zegascua* 'moisten'
Where	*abe* (see Belong)		
White	*sipúgo*[3] [53]; also *tsipugua* 'he is w.' (P.)	*chipágua*[3]	
Wind	*pudua*	*punúa*	*fiba;* see Air
Woman	*ome;* pl. *omecana, omeyagua* 'young w.' (P.)	*punágua*	*muysca fucha; fuhucha*
Wood	*suara*[64]	*choána*[64]	*ja*
Work	*arpai*	*arpagúet*	
You	*pēmâla* (P.)	*pemal*	*mie*
Young	*sapingua* (P.)		
Young girl	*omeyágua* (P.)		
Youth = young lad	*sapingua* (P.)		

Your; see Pronouns.

Notes to Glossary

[1] Contains SB. *atchuo* 'dog.'

[2] This probably has no connection with *obeah* in common use in the West Indies, to denote evil magical rites. *Obeah* is usually derived from a West African source.

[3] Note *s* = *ch;* see s.v. bird, black, bring, carry, cut, dark, laugh, meat (but see nn. 39; 52); star (n. 53), talk, tree, wood. Note here SB. *-quey* = C. *-cui* seems to be identical with CH. *-gua(na).*

[4] Note the omission of *l* in SB.

[5] *Ood-* preformative + Sp. *bote;* see Canoe, Sail.

[6] CH. *guasgua* 'young person' + *cha* 'male'; perhaps CH. *s* = *ch* in SB.; C. *machigua.* See Girl in CH. and n. 36. In Quito in Ecuador *guambra* is the slang local word in Spanish for 'boy; girl.' Is this *gua-* element from Quichua and perhaps cognate with CH. *gua* in *guasgua?*

[7] SB. *p-k* = CH. *p-c; p* = *b;* see Phonetics.

[8] *Ulu* 'canoe' seen in SB. *oodcac-olah* 'canoe'; *telmalah* 'sea,' which latter word appears in C. both as *talmal* and *telmal;* see Sail, Sea. In SB. *ootmola* 'sail,' however, we have evidently the same stem as in SB. *mola* 'clothes' = 'cloth,' probably a different element from SB. *ulu* 'canoe,' *telmalah* 'sea.' There is no connection with SB. *moli* 'horse.'

[9] SB. *v* = C. *b*. Cf. n. 14.

[10] SB. *e* = C. *a*. Note SB. *-ripa* = ?

[11] SB. *tani* = C. *taniq*.

[12] SB. *-wey* = C. *-gue;* cf. n. 63.

[13] SB. *quil-* = C. *quin; l-n;* cf. n. 63 *r* = *l*, CH. *bquy-* = SB *qui(l)-* C. *qui(n)*.

[14] *Ne* = definite article; see n. 31; *-gana* = pl. ending.

[15] SB. *budoquis(ah)* = CH. *bgys(cua)*; viz., *b* = *b; d* = *g; z* = *s*, C. *purque* seems cognate with SB. *b-d-qu* = C. *p-r-qu*(= *k*)? Note SB. *evi-*, C. *ipá* and SB. *nevah*, also with dem. element *n*.

[16] CH. *to* is probably not *un neologismo de la interjección castellana "to"* (thus Uricoechea, s.v. *perro* 'dog'), but a cognate of SB. *atchuo*. Note *ch* = *t*.

[17] *B* = *p;* see Phonetics. Note also SB. *(y)ina-gua* = C. *(t)iná* 'dry.' SB. has the predicate *-gua*.

[18] *G* = *b*, but why the SB. *l*-insert?

[19] Note difference in voice-stress.

[20] SB. *kaká*—C. *cacá* 'and' = forty + ten.

[21] Note elision of *-g-* in SB.

[22] SB. *ookey* = CH. *hoc*.

[23] C. *quilulele*, probably = *Christus* + *lele*?

[24] *Newédi* (Bell); *nuwédi* (P.); difference of spelling explained by the indeterminate character of the vowel. Note *-i-* in C. *nuhuéti*, which shows the indeterminate *t-d*. See Phonetics and also n. 62.

[25] All the same stem (?); SB.-C. *c(k)-k* and CH. *p-c; p* = *k*(?).

[26] I heard an aspirate plainly here and also *ati;* cf. n. 55. Note SB.-C. *t* = CH. *s;* also in SB.-C. *ti* = CH. *sie*. Cf. n. 44.

[27] In SB. the demonstr. *ne* + *ekto* = C. *ito;* see also n. 55.

[28] No connection with *ulu* 'canoe'; *telmalah* 'sea'; see n. 8. The element *-cabái* = Sp. *caballo*.

[29] *G* = *c(k)*; see Phonetics and n. 37.

[30] Note the aspirate in SB.

[31] SB. *negseacona* = dem. *ne* (see n. 14) + *gsea* = *ksi* = CH. *xi* in *xiua* + the pl. *-cona* = *-gana* (see Grammar). Note the CH. form *xie-sie* 'water' = SB.-C. *ti*. See n. 26 and 34.

[32] Note C. *gu* (*gw*) = CH. *c(k)*.

[33] Common root *al*.

[34] *Ts* and *ch;* see Phonetics.

[35] Note preformative *ch-* in CH. The root is probably *abe-abu*.

[36] SB. *mach* = C. *mas* = CH. *muys*. See n. 6.

[37] *Ome* 'woman' and *nec* = *neca* 'house' + verbal *-(w)ey* lit. 'to house a woman.' Cf. Sp. *casarse*.

[38] Query: Is the real element *i* + dem. *n* in SB. and C., and dem. *ch* in CH., or is it a change from *n* to *ch*, like *n* to sibilant in Chinese and Sumerian (Prince, *Materials for a Sumerian Lexicon*, p. xii; see n. 61)? The former is more probable.

[39] Note constant *ch* in SB. and C., but *sichigua* also means 'black' in SB.; *s* = *ch;* cf. n. 3. See s. v. Panamanian.

[40] I see a connection between SB. *(s)acke*, C. *cae(t)* and CH. *iaia*, C. *cae(t)*. Probably also CH. *q* in *quyne* belongs here.

[41] Note nasal insert in SB.

[42] Note the same ending *-edi* as in *macheredi* 'man,' q.v. probably also the same *-edi* as in *nuwedi* 'good'; *n.* 62.

[43] I cannot explain SB. *f* apparently = C. *t*.

[44] Contains *ti* 'water'; observe SB.-C. *t* = CH. *s;* cf. n. 26.

[45] I suspect that Mrs Bell's text should read SB. *tiwalo* = C. *ti* + *gual*. Cf. s. v. Rain in Cuna. On CH. *xie* = *ksie*, cf. n. 31.

[46] Mrs Bell evidently heard a longer vowel than I did; *tagsah* (B.); *tâksĕ* (P.).

[47] The root seems to be *uk* in SB. and C. See Give, and cf. n. 22.

[48] SB. *p(r)m* = CH. *b(l)n* (?).

[49] Note the metathesis between SB. and C.-CH., and see n. 50.

[50] SB. *c-w-g* = C. *qu(k)-c-j* (= *k* = *w*). See for metathesis, n. 49. Is the *r* factitious in SB. *carbey* (B.)?

[51] SB. *j* = C. *y*, a real palatalization.

[52] SB. *sipugo* and *tsipugo;* see White; *s* = *ts;* really a highly palatalized *ch*. See nn. 3, 53.

[53] Clearly the same word in SB. and C.; *s* = *ch;* see n. 3. Only SB. has the element *-qua*(o), seen in CH. *fa-gua*.

[54] Observe SB. *e* and C. *i;* also *p-b; d-t*.

[55] SB. *ecktо* = C. *ito-*, probably an aspirate in SB. Cf. n. 26. See Feel. Same element as in SB. *necktosah* 'hear.'

[56] SB. *atmala* = *at* = 3 p. + *mala* = plural element (see Grammar). The C. *amal* is a less primitive form = *a(t)mala*, pl. of *ati* 'he, it.' *Pela* is cognate with the C. pl. element *ambal, ambali* and not with the 2 p. *pe*.

[57] SB. *mod-* probably = C. *-met-*.

[58] *Patparti* in SB. is clearly the same element as in C. *purti-quêt*. In SB. it is a description of *atchuo* 'dog,' apparently used here for any small four-footed animal. In C. *imiâ* = 'eyes' and *purtiquêt* seems to qualify this noun.

[59] C. *-gual* = SB. *-wala;* see n. 3 for SB. *s* = C. *ch*.

[60] SB.-C. *-ne-* and CH. *-nyn-* are allied to C. *nao* 'go.'

[61] SB. *ampogua* = *an* 1 p. + *pogua* 'two'; *anmala* 'we,' pl. C. *nen* probably is the reduplication of the 1 p. *n*, seen in *ani, an* = the 1 p. singular. CH. *chie* 'we' contains another stem from SB.-C., but is clearly cognate with CH. *hycha* 'I.'

[62] See n. 24. The ending *-edi* is probably the same as that seen in *macheredi* 'man'; *serredi* 'old.'

[63] SB. *w-r* = C. *gu-l;* cf. n. 12.

[64] See n. 3 and observe SB. *r* = C. *n*.

COLUMBIA UNIVERSITY
NEW YORK CITY

OSAGE MARRIAGE CUSTOMS

By FRANCIS LAFLESCHE

THE marriage customs of the Osage are clearly defined, well established, and are observed to this day by the full-bloods, although it is understood that the people are now amenable to the laws of the State in which they reside. There are two forms of marriage recognized as legal—one that takes place between a youth and a maiden and is called *Mízhi*^{n}, the other, called *Omíha*, in which one or both parties had previously been married.

The Mízhi^{n}

The marriageable age is reached shortly after puberty, and those who have attained that period of life are known as *Tséga no*^{n}, "newly grown." These young people, unless near relatives, are not allowed to mingle or even to speak to one another. They are strictly guarded, so that no couple can arrange their own marriage affairs, and open courtship or love-making becomes impossible.

The initiatory steps toward marriage must come from the family of the young man. No one having marriageable daughters can do anything looking to their marriage: they must wait to be sought. It therefore becomes the duty of the parents or other near relatives of the youth to seek for him a suitable wife, who must be chosen from a gens other than the gentes to which the father and the mother of the youth belong.

When a suitable maiden has been found—one who in the opinion of the young man's family would make him a good wife—the parents summon four old men, each of whom has won the title of *Nígka do*^{n}*he*, or Good-man. This title belongs to a man who has been married according to the established customs of the tribe, has successfully raised and married off his own children, and lived to become a grandfather. The *Nígka do*^{n}*he* are employed to conduct the negotiations between the family of the youth and that of

the chosen maiden, and for their services they receive a fee. When the four men present the proposal of marriage, they extol the character of the family of the young man and also that of the young man himself.

There is one point on which every self-respecting family is particular, and that is that the daughter shall marry only into a family the parents of which have been properly united in accordance with the recognized tribal custom. One of the first inquiries made of the four old men by the parents of the girl is upon this subject. When the answers given are satisfactory as to the standing of the youth's family, the next step is the consideration of the number and character of the gifts to be made by the parents of the young man. As all the near relatives of the maiden must each have a gift, it becomes necessary to canvass carefully the amount and value of the gifts offered to insure satisfaction on the part of all entitled to share in them. These negotiations often consume considerable time. When at last this matter is adjusted the four old men are bidden to inform the family of the youth that the relatives of the maiden will be consulted. This form of message is regarded as an assurance to the four men that their mission will be successful.

At this point it is possible for the parents of the girl to reject the proposal, but if they are favorably inclined they now communicate with the maternal uncle and consult with him. If he gives his consent, all the other relatives agree to the proposed marriage. The parents of the maiden send a messenger whose duty it is to convey their consent to the parents of the young man and to announce the time when the ceremony of delivery of the gifts, the maiden, and the young man shall take place. On the appointed day the parents of the young man lead a procession composed of all the relatives of the youth, each one bearing a gift of a horse or a blanket to be distributed among the relatives of the maiden. When all the promised gifts have been delivered to the relatives of the girl and accepted by them, the relatives of the young man return to their homes.

On the following day the parents of the maiden send her, accompanied by a prominent man, to the home of the prospective bride-

groom to be delivered to him and to his parents and relatives. This act is spoken of as the declaration "We give to you our daughter." The bride takes with her gifts of horses and blankets to be distributed among the relatives of the bridegroom. The next morning the relatives of the young man again form a procession and take both bride and groom to the house of the bride's parents and deliver her and her husband to her parents and relatives. This act, which completes the marriage, is equivalent to the declaration by the youth's parents, "We give to you our son."

The Omíha

The second form of marriage, according to the established custom of the tribe, is called *Omíha;* it took place between persons who had previously been married according to the *Mízhi*^{n} form but who had become separated by divorce or death.

In this form of marriage the man sends messengers to the widow with his offer of marriage, accompanied by gifts consisting of horses and blankets. While the offer of marriage is made direct to the widow, she, wishing to conform as nearly as possible to the *Mízhi*^{n} form, refers the messengers and the gifts to her parents, if living, or to her nearest relatives, in order that they may decide for her. These relatives consult on the proposal, and if they are satisfied with the negotiations they convey to the messengers their consent and by them send for the man offering himself in marriage. Arriving at the house of the relatives of the woman, he is given a seat beside her, and the marriage is consummated without further ceremony. This form of marriage must be observed by widowed or divorced persons if they are to retain their social position in the tribe and if the man desires to keep in line to win the title of *Níǥka do*^{n}*he*, provided he has not already achieved it.

The Gasho^{n}'the migtho^{n}ge

It sometimes happens that a young man falls in love with a maiden and desires to marry her. Fearing opposition, either by his own parents or by those of the maiden, should he endeavor to marry her openly, he cohabits with her in secret. This is not recognized

as a marriage, but is called *Gasho^{n}'the migtho^{n}ge*, which, freely translated, means, a union in the natural state or in disregard of tribal custom. If this act becomes known to the parents or to other near relatives of the young man, they hasten to make the union a marriage by delivering the young man to the maiden and her relatives, with gifts of horses and other valuables, thus making the union equivalent to a marriage in the *Mizhi^{n}* form.

The living together of a man and woman without first going through the ceremony established by tribal custom is called *Gasho^{n}'the migtho^{n}ge*. The title of *Nįgka do^{n}he* is denied a man who lives with a woman in this manner, and the children issuing from such a union are not regarded as "persons" for the reason that the act of their parents is like that of unthinking animals.

Cohabitation between a man and a woman, whether young or old, in deliberate disregard of tribal custom, is declared to be dangerous to the morals of the young people and to have a tendency to encourage them to defy parental authority.

Bureau of American Ethnology
Washington, D. C.

REMARKS ON RADOSAVLJEVICH'S CRITICAL CONTRIBUTION TO "SCHOOL ANTHROPOLOGY"[1]

By MAURICE FISHBERG

WHEN I read that "Critical Contribution to School Anthropology" in the July–September number of the *American Anthropologist* I recalled that delightful little French comedy *La Poudre aux Yeux* by Labiche. Dr Malingear, and especially his wife Blanche, discovered, even before our own P. T. Barnum, that people like to be humbugged: all you have to do is to throw dust into their eyes and they will believe that you are great, accomplished, rich in worldly goods or in knowledge and attainments. The critic of Professor Boas' work, judging by the extravagant way he uses the pages of the *Anthropologist* and refers to authorities and recklessly quotes them, appears to me to be a contemporary disciple of Dr Malingear. He is satisfied, apparently, that the average reader will be impressed with his immense erudition if he will but note the large number of authorities quoted, whether relevant to the subject under discussion or not, so long as the quotations can serve the purpose of *poudre aux yeux*. If this criticism had appeared in an irresponsible sheet it could under no circumstances be taken seriously by any one interested in the problems concerning the structure of man, or the problem of heredity versus environment as presented by human traits. At most it could contribute to the gaiety of nations. But considering that it has somehow found its way into the *American Anthropologist*, the organ of those who devote their energies to the study of races and racial traits, it may be taken by some as a real demolition of Professor Boas' painstaking work dealing with the effects of the American environment on the physical development of immigrants. Accordingly, I believe

[1] In connection with this paper the reader should consult the article by Dr Robert Lowie, "Dr Radosavljevich's 'Critique' of Professor Boas," in *Science* for April 5, 1912.—EDITOR.

that it is imperative that the lack of fairness of this critic should be pointed out in the pages of the journal in which his criticism appeared. Doubting whether Professor Boas, who is at present away from this country, will deem it wise to take notice of this criticism, I thought it advisable to take the matter up and thus prevent its passing into history unanswered. In doing this I shall simply confine my remarks to the question whether the critic is honest and fair to Professor Boas, and for obvious reasons will leave the theoretical aspects out of consideration.

While reading the article we are at once struck with the fact that the writer had no honesty of purpose, had no intention to be fair with Professor Boas. To begin with, the complete work has not even yet appeared, as I am writing these remarks. A fair critic would undoubtedly have waited until the complete work had made its appearance before attempting to analyze its results, irrespective of whether he agrees with Boas or not. But Radosavljevich has gone a step farther: There have appeared two preliminary reports; the second one, issued about a year ago, is more complete and contains data which are not available in the first report. Radosavljevich has not even taken the trouble to notice the second report, and the result is a painful exhibition of unfairness. Thus he rebukes Boas for not stating the exact number of individuals measured (p. 421), while a glance at the second report would have given him the information he craves. To my mind it is gratuitous to say that Boas has drawn hasty conclusions from comparatively few measurements, and even to hint at fraud by saying "We are told that the measurements include about 30,000 individuals, but in the report are given only," etc. Had he consulted the second report, which was available before his criticism was printed, he would have found details of all the individuals referred to, and also data about races other than Italians and Hebrews, such as Bohemians, Poles, Slovaks, and Hungarians.

It is dishonest to state that thousands of individuals are not sufficient to report on, and to attack the conclusions reached by Boas, asserting that other observers have not arrived at such conclusions while making observations of 100 or 500 individuals, as

Radosavljevich does. Thus he lines up Hoesch-Ernst's 350, Reuter's 373, Landsberger's 104 children measured against Boas' 30,000!

With the proclivities of the average writer of a dissertation for a degree, Radosavljevich is not satisfied with discussing the problem before him: he talks a great deal about everything, but little of the subject investigated by Boas. He occupies eleven pages of valuable space with a discussion of "mechanical-functional," "hereditary," and "geographical-local" theories of head-form: terms which we have not met in anthropological literature. We search further with a view of discovering what he means by these high-sounding words, and find that the "mechanical-functional theory" of Radosavljevich implies that "the shape of the head may be caused by the mechanical influences during postnatal life," and we are none the wiser. To substantiate this theory he quotes Darwin to the effect that habitual spasm of the muscles, and a cicatrix from a severe burn, may modify the facial bones; that shoemakers in pursuing their vocation may acquire prominent foreheads. But when we recall that comparatively few persons in this world are shoemakers and that fewer still have habitual spasms of the muscles, or cicatrices, we wonder what this has to do with the head-shape of the bulk of the population. Moreover, supposing that many had cicatrices and spasms, and worked as cobblers, and that even the vaults of their crania (not alone their faces and foreheads) became deformed, would these deformities be transmitted to their offspring? Students of physical anthropology know of better examples of artificial deformation of the skull, but they do not know that these deformities are transmitted by heredity. I am also at a loss to discover the relevancy of the fact that "about fifty years ago, a German anthropologist, Welcker, found that short men more frequently have rounded heads and tall men elongated heads," with regard to a "mechanical-functional theory." I have looked over Nyström's paper quoted by Radosavljevich to the effect that the shape of the head may change under the "mechanical-functional" influence of diet, but could find nothing of the kind. Similarly the long quotations from Holden's *Osteology* are irrelevant, as are

the references to Cuvier, Görke, Papillault, Haeckel, and Osburn. The claim that "the mechanismus [*sic*] of birth" has a relation to the shape of the head is discussed quite fully by Professor Boas in the very paper criticized, and it is altogether gratuitous to speak of it, even when a critic is doing his best to display erudition.

We also have a discussion of the "first, second and third hereditary theories" of head-form occupying three and a half pages. At the outset we are impressed with the array of well-known *authorities in craniology*, such as Möbius, G. Stanley Hall, Zupanchich, and others equally known for their researches in craniology and archeology. The following interesting item of information is imparted to us: "The history of man in England does not begin 5,000 years ago with an invasion of Celt or of Saxon, but at a period of which 5,000 years is but a small fraction. This theory has recently been advanced also by a Slovenian anthropologist, Zupanchich, in his lecture given at the University of Belgrade." As to what all this has to do with the problem whether the head-form of the immigrants in New York undergoes changes, we are not enlightened. But it serves as dust to be thrown into the eyes of those who may think that there is some redeeming feature in Boas' work.

It is difficult to follow the vast array of names quoted without gasping for breath. But when Radosavljevich speaks of a "national form of the head," on pp. 400 and 401, we are actually bewildered. And when he confides to us that "the average cephalic index of 72.5 is the national type of the head of Englishmen," as well as of the Irish, we have enough for the time being, and we recall the work of the late Dr Beddoe, and the Anthropometric Committee, which has escaped the attention of Radosavljevich, who considers his authority for the anthropology of England one Zupanchich who last year delivered a lecture at Belgrade.

Radosvaljevich is not yet prepared to attack the subject under discussion—Boas' work—but takes up nearly three more pages with a discussion of "the geographical-local theory" of head-form, which he frankly tells us "is not unlike the preceding." "It claims that the shape of the head is distributed more according to geographical localities than to nationalities." Those acquainted with Deniker's

excellent maps will be amazed to hear that Deniker attributes the shape of the head of different races to the "geographical-local theory" of Radosavljevich. As an example of the geographical-local influences on the head-form, we are offered the following: "Beddoe in studying 200 boys found that those belonging to the navy have larger heads than those of the reformatory and industrial schools." After having this evidence it would surely be worse than heresy to doubt that "geographical-local theory."

It may be hoped that Radosavljevich's paper does not reach Otto Ammon, because if he reads the résumé of his theory given on page 403 he will find good cause for resentment. The critic does not omit to mention even that great "authority" in physical anthropology, Edmond Demolins, and his notorious book, *A quoi la Supériorité des Anglo-Saxons*, which has immense geographical-local bearings. Finally, to fortify that geographical-local theory we are treated to the following quotation from Topinard's smaller book:

> The cephalic index varies in the human races from 71.4 in Greenlanders to 85.63 in Lapps, in the average of the series; and from 62.62 in a New Caledonian to 92.77 in Slav (Wend) in particular instances. The difference is greater if we include the distorted skulls. A scaphocephalus in the Laboratory of Anthropology has an index of 56.33 and a Peruvian skull of an Inca, one of 103.

All this is, of course, quite an interesting bit of information, but what a scaphocephalus has to do with the "geographical-local theory" of head-form, or with Boas' work among the immigrants in New York City, we are at a loss to discover.

With the support of such great anthropological authorities as Zupanchich, Demolins, Möbius, etc., Radosavljevich is now ready to pick up courage to say that it "is not his intention to criticize these more or less different theories." All he wants to know about Boas is, "Did he grasp the difficulties of their (?) theories in shaping his own theory? Is his [Boas'] investigation a progress or regress in experimental physical anthropology in general and school anthropology in particular?" This is what troubles him after he has covered twelve pages and scattered more dust in the eyes of the

readers of the *American Anthropologist* than has ever before been attempted.

But he does actually discuss Boas' investigations, and I regret to say that he does it with less fairness than he displays when speaking of that memorable lecture delivered last year by Zupanchich at Belgrade. As any one who carefully reads Boas' preliminary reports can readily see, *he advances no theories. He merely reports findings.* To call his facts and figures theories, as his critic does, is unfair, to say the least. Moreover, there is not much new in the theoretical aspects of Boas' work. Many anthropologists have previously asserted that the head-form is subject to the influences of environment. That stature is influenced by social, economic, and geographical conditions is an old and well-known fact, and Boas has again confirmed it in a striking manner. Little, if any, evidence has heretofore been brought forward in support of the suggestion that the form of the cranium is not exclusively an ethnic trait, depending only on heredity and uninfluenced by external conditions, such as climate and social and economic conditions. Boas was fortunate in having at his disposal a considerable number of individuals belonging to diverse ethnic stocks, who had recently emigrated from the countries in which they and their forbears had lived for centuries, and settled in a new environment. From the measurements taken under his direction it appears that the descendants of the immigrants show some change in somatic traits, and Boas merely reports in detail on these changes. He deals in his report, as I have said, with findings, with facts, and not with theories, and especially not with ultimate causes. The fact that in the natural sciences, as John Stuart Mill says, a cause is in itself a phenomenon without reference to ultimate causes of anything, is not Boas' fault, to be sure. Under the circumstances it is unfair to throw dust into the eyes, to quote all sorts and conditions of authorities, including Demolins and last year's lecturer, Zupanchich, with a view of ascribing to Boas theories which he never advanced in the publication under consideration.

It is also unfair to attack the staff of men who have done the work under Dr Boas' direction and to refer to them as "scholarly

looking" and "anthropometrical amateurs" (it is curious in this connection to mention that a careful search of anthropological literature for the last twenty years seems to indicate that this is Radosavljevich's maiden effort in this field), and even to look askance at the problem whether the fact that there were thirteen assistants may have had a disastrous effect. To insinuate that these thirteen men were incompetent is the limit of impudence.

Rebuking Boas for not having done the work by himself, Radosavljevich displays a lamentable ignorance of the manner in which most of the great anthropometrical investigations have been conducted. Any one acquainted with anthropological research, and especially measurements of the living, knows that individual work is impracticable, often impossible, and really unnecessary, particularly if we desire to have observations on a large number of individuals. Virchow in Germany, Schimmer in Austria, Körösi in Hungary, and others have entrusted the investigations of the color of the skin, hair, and eyes of school children in those countries to the teachers, who were given explicit directions how to proceed. The Anthropometric Committee in England, Livi in Italy, and Ammon in Baden, had many workers in the field. Indeed, Boas was extremely careful, as is evident from the way he speaks of training his assistants, trying to ascertain their personal equation, and only after finding that the individual differences were comparable did he allow them to proceed with the work.

Radosavljevich rebukes Boas for another omission: he neglected to measure the height of the skull. Well, I recall that last winter Radosavljevich was requested to demonstrate a reliable method of obtaining this very measurement, at a meeting of the American Ethnological Society, and he had to agree that it was a very untrustworthy procedure—this measurement taken twice on the same head gave him a difference of no less than fourteen mm. It is for just this reason that careful anthropologists do not take this measurement, especially when they desire to measure a large number of persons. Indeed, it has not been taken in any great anthropometric investigation. It is usually left for students, who take measurements of a couple of dozen individuals to report them in their theses for the degree of Ph. D.

I am at a loss to account for the rebuke the critic administers to Boas for disregarding Sergi's method of craniology, unless it is again a case of dust in the eyes, because it offered him such a splendid opportunity to use big words — as befits a scholar. Just think of it—ellipsoides, ovoides, pentagonoides, sphenoides, etc. Even tyros in anthropology know that Sergi's method has hardly been taken seriously outside of Italy, and there only by a few of his pupils.

It is a pitiful sight to behold our critic struggling with a mass of second-hand quotations and references. He quite often loses himself in a maze of contradictions, occasionally undoing at the end of a paragraph all he has said at its beginning. Thus on page 427 he takes issue with Boas because he says that the human head becomes slightly longer with increasing age. Apparently with a view of making it appear that this is Boas' first literary and scientific effort, Radosavljevich demands sharply why Boas does not mention the discoverer of that fact, and proceeds forthwith to quote authorities to the contrary, with the following results: Weissenberg found that the cephalic index in the newborn infant is 86.4, then it keeps on decreasing gradually till it drops to 82.4 in the adult; Lucae found a slight decrease in the cephalic index with advancing age; Gray in his Aberdeen Report remarks that "the cephalic index was less in the older than in the younger girls." It is here evident that in his eagerness to display erudition, he quotes against his own case, so long as it gives him an opportunity to mention "authorities."

The unscrupulousness of the critic is evident on almost every page of his paper: In one place he points out that in anthropometric statistics mere averages can not give satisfactory results—"It is a method which has been condemned both in America and in Europe" (p. 408), knowing well that Boas has not relied on mere averages, but has given in detail the seriations of each series, the standard deviation, etc. Further on in his article he changes front and condemns statistics altogether, by saying: "Some biometricians and experimental psychologists make a fetish of figures. Mathematical calculations in anthropometry and experimental psychology, as also in experimental pedagogy, are of fictitious value." But his un-

scrupulousness reaches its limit when he quotes the introductory remarks by Senator Dillingham and attributes them to Professor Boas. On page 5 of the Report which Radosavljevich criticizes, the Immigration Commission says:

> One of the best experts on this question, Prof. Franz Boas, of Columbia University, was invited to direct the investigation and was put in general charge. A small appropriation was made to test the question and see if the promise of results was sufficient to warrant the continuance of the investigation. Almost immediately it became evident that there might be much value in such a study, and the work has therefore been continued, although as yet only on a small scale.

Bearing in mind that these words were stated by the chairman of the Immigration Commission, Senator Dillingham, we can appreciate the honesty of Boas' critic when we read the following attributed to Boas:

> A small appropriation was made to test the question and see if the promise of results . . .

and basing his opinion on these words, Radosavljevich arrives at the conclusion that "he [Boas] began and finished the investigation in which he was put in general charge without requisite scientific exactness and care."

It is pathetic to behold this novice in anthropology occupying nearly two pages of the *American Anthropologist* telling Boas the exact meaning of the term "cephalic index," enumerating many of the synonyms, and defining it as "a ratio between the width (or breadth) of head and the length of the head." He even deems it advisable to give a long, and then a short, formula for the calculation of this index. That he tells in detail, as befits a teacher, what is meant by the terms dolichocephaly, brachycephaly, etc., goes without saying. His confusion as to what constitutes a long and what constitutes a short head is actually pitiful as any one who can muster the patience to read page 408 of his paper can see.

He stops at nothing in his attempts to discredit Boas' work. On page 405 of his review he says:

On page 32 of his report he [Boas] says that no evidence has been collected which would show an actual change in type due to the direct influence of environment, because the type of immigrants changes from year to year, owing to a selection which is dependent upon the economic conditions of our country, 'far reaching' changes in 'type' which 'can not be ascribed to selection or mixture.'

When we turn to page 32 of the report we do not find anything of the kind stated by Dr Boas. I shall reproduce the three paragraphs of that page in order to show the unfairness of the critic:

According to our knowledge of anthropological conditions in the whole world, the form of the body seems to be the most stable characteristic of any given race or type. Indications have been found, however, showing that under more favorable environment the physical development of a race may improve. This was shown by Gould and Baxter in their investigations of the physical characteristics of the soldiers enlisting during the war of the rebellion, by H. P. Bowditch in his investigations of the development of Boston school children, and by similar investigations carried on at later times in America as well as abroad. No evidence, however, has been collected which would show an actual change in type due to the influence of the environment. Where changes of this kind seem to occur—as, for instance, in a comparison of the types of city population and country population in southern Germany and in Italy—the inclination of observers has been rather to attribute the difference either to the selective elimination of the weaker type or to the immigration of different types.

From a practical point of view it seemed all important to know whether American environment had a favorable or unfavorable effect upon the descendants of immigrants.

The investigation has shown much more than was anticipated. There are not only decided changes in the rate of development of immigrants but there is also a far reaching change in the type—a change which can not be ascribed to selection or mixture, but which can only be explained as due directly to the influence of environment. This conclusion has been tested, and in many different ways, and seems to be amply proved. . . .

Comment is unnecessary for those who read both these quotations. The misrepresentation is flagrant. And we are not surprised at Radosavljevich's proclivity to ascribe to Boas statements which he never made, and hold him responsible for statements made

by Senator Dillingham, as well as for extravagant statements published in a New York magazine.

Radosavljevich's sophistry reaches a degree that is nauseating when he arrives at conclusions, and gives a "general summary" of his results. It is the height of impudence to occupy more than forty pages of a journal, talking all sorts of nonsense, making statements of commonplace matters, authoritatively warning one who has spent his best years in the study of the racial traits of man, as well as the growth of the human body, about the precautions necessary in these studies; nay, even telling him what the cephalic index is, how it is obtained, giving him the formula for its calculation, and then conclude that "his method of collecting scientific data is uncritical" (whatever this may imply) and that "he lacked the requisite scientific exactness and care"! The whole matter would be ridiculous, if so many people did not read only the "general summary" of a paper and rely on the fact that because it has been published in a responsible periodical there is sufficient guaranty that the writer has given ample proof for his conclusions in the text of the paper.

1337 MADISON AVENUE
NEW YORK CITY

ANTHROPOLOGY AT THE WASHINGTON MEETING, WITH PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR 1911

By GEORGE GRANT MACCURDY

THE annual meeting of the American Anthropological Association was held in the United States National Museum, Washington, D. C., December 27–30, 1911, in affiliation with Section H of the American Association for the Advancement of Science and the American Folk-Lore Society. The attendance was good, and the program exceptionally long and interesting. The most important features were the two symposia: (1) *The Problems of the Unity or Plurality and the Probable Place of Origin of the American Aborigines*, discussed by J. W. Fewkes, A. Hrdlička, W. H. Dall, J. W. Gidley, Austin H. Clark, Paul Bartsch, W. H. Holmes, Alice C. Fletcher, Walter Hough, Stansbury Hagar, A. F. Chamberlain, and R. B. Dixon; and (2) *Culture and Environment*, discussed by J. W. Fewkes, Clark Wissler, Edward Sapir, and Robert H. Lowie. The first of these two discussions is printed in full in this issue of the *American Anthropologist*, and papers devoted to the second will appear in the next issue. Dr Fewkes presided at the six sessions in charge of the American Anthropological Association; also at the single session of the American Folk-Lore Society, in the absence of Prof. Henry M. Belden, President of that society, Prof. George T. Ladd, Vice-President of Section H, was chairman of the single session in charge of the Section. The social functions to which members of the affiliated societies were invited included: a reception by Dr and Mrs Robert S. Woodward at the Carnegie Institution; a reception at the New National Museum; and the reopening of the Corcoran Gallery of Art.

SECTION H

Officers for the Washington meeting were nominated as follows: Member of Council, Dr Aleš Hrdlička; Member of the General

Committee, Dr Charles Peabody. Sectional offices were filled by the nomination, and election by the General Committee, of Dr J. Walter Fewkes, Bureau of American Ethnology, as Vice-President for the ensuing year; Dr Alfred M. Tozzer, member of the Sectional Committee to serve four years (to fill a vacancy); and Dr Pliny E. Goddard, member of the Sectional Committee to serve five years.

American Anthropological Association

Members of the Council present in addition to President Fewkes were: A. F. Chamberlain, R. B. Dixon, W. C. Farabee, Alice C. Fletcher, P. E. Goddard, G. B. Gordon, C. H. Hawes, F. W. Hodge, W. H. Holmes, W. Hough, A. Hrdlička, B. T. B. Hyde, R. H. Lowie, G. G. MacCurdy, T. Michelson, C. Peabody, P. Radin, E. Sapir, H. I. Smith, H. J. Spinden, A. M. Tozzer, and C. Wissler.

Report of the Secretary.—The Secretary reported that there had been no special meeting of the Association, Council, or Executive Committee since the close of the session in Providence, the proceedings of which had been published in the *American Anthropologist* for January–March, 1911.

During the year death has claimed three members of the Association: David Boyle, a Canadian ethnologist of international repute; Mrs Esther Herrman of New York; and Cornelius E. Rumsey of Riverside, California. Mrs Herrman, whose death occurred on July 4, was one of the founders of Barnard College and of the Hebrew Technical Institute for Boys; also a generous donor to the American Museum of Natural History and the Botanical Gardens in the Bronx.

The annual growth of the Association in membership has been substantial but could be much augmented if all our members would coöperate by sending new names to the Secretary. The names of twenty-eight persons[1] are herewith submitted for election to membership, as follows:

Benjamin Walworth Arnold, C. M. Barbeau, Robert D. Bardwell, Rev. R. J. Briggs, D.D., M.D., Señor Jacinto Jijon y Caamaño, Dr Salvador Debenedetti, Miss Frances Densmore, Rev. F. Ward

[1] Full addresses in the list of members printed elsewhere in this issue.

Denys, William Edmond Gates, W. F. G. Geisse, E. J. Halloran, Newton H. Harding, William Walter Hastings, Charles von Hoffmann, M.D., Louis J. Hopkins, William Barri Kirkham, Señor Carlos Manuel Larrea, Geo. W. A. Luckey, Miss Elizabeth H. Metcalf, Prof. Edward S. Morse, Luther Anderson Norland, John T. Reeder, Jack Shipley, M.D., Joe H. Todd, M.D., University of Pennsylvania Museum, W. D. Wallis, Frederick Adams Woods, M.D., and Jonathan Wright, M.D.

Special attention is called to the amendments to the Constitution which appeared in the last report of the Secretary,[1] but which have not yet been incorporated into a new edition of the Constitution.

The campaign for new members has been kept up with a result, however, hardly commensurate with the cost of the effort. In March the President appointed the Secretary to represent the Association at a meeting of the American Year Book Corporation and to make a report, which is herewith submitted:

A meeting of the American Year Book Corporation was held at the Yale Club, New York City, March 25, 1911. Our President, Dr J. Walter Fewkes, designated me to represent the American Anthropological Association and report at the next meeting of our Council or Executive Committee.

As I had asked Mr Stansbury Hagar to act as alternate, in case of my absence, he also was present at the meeting. There were in fact three successive meetings: (1) of the Directors, (2) of the Year Book Corporation, and (3) of a Conference in which local historical societies were invited to take part. I was present at all three meetings.

The American Year Book Corporation is based on the idea of the coöperation of national learned societies in a common task. The following criteria are to govern conditions of membership:

1. The organizations concerned to be learned societies of every description.
2. The societies must be national in membership, purpose, and scope.
3. None of the societies to be formed for, or actively engaged in, a propaganda for the securing of governmental action of a special or particular kind.

It is a fixed principle that no representative of a society, no member of the Supervisory Board, and no society incurs any financial responsibility through connection with the enterprise. This principle is safeguarded by the form of contract with the publishers (D. Appleton and Co.). The prime purpose of the organization is the publication of the Year Book.

[1] *American Anthropologist*, N. S., XIII, p. 102, 1911.

The present membership of the American Year Book Corporation consists of more than 40 national learned societies. Since the meeting of the American Year Book Corporation, the Managing Editor of the Year Book commissioned me to write the article on "Anthropology, Ethnology, and Prehistoric Archeology," which has been done; and the Year Book for 1911 will appear before the beginning of the new year.

Respectfully submitted.

GEORGE GRANT MACCURDY,
Secretary.

The report of the Secretary was accepted and he was authorized to take the necessary steps toward completing membership of the American Anthropological Association in the American Year Book Corporation.

Report of the Treasurer

The Treasurer's report was received and referred to an auditing committee appointed by President Fewkes. It follows:

RECEIPTS

Balance from 1910		$316.21
From Anthropological Society of Washington, for *Anthropologist:*		
Vol. XII, No. 2	$62.16	
Vol. XII, No. 3	59.73	
Extra copies and reprints	15.18	137.07
From American Ethnological Society, for *Anthropologist:*		
Vol. XII, No. 3	$62.27	
Vol. XII, No. 4	62.85	
Vol. XIII, No. 1	63.25	
Vol. XIII, No. 2	66.32	
Extra copies	4.14	258.83
Annual dues		1,255.62
Annual subscriptions to *American Anthropologist*		564.20
Sale of back numbers and extra copies of *American Anthropologist*		127.08
Authors' reprints (at cost)		382.49
Sale of *Memoirs*		24.66
Publication fund		170.00
American Folk-Lore Society:		
Half cost of Bibliography of Periodical Literature for *American Anthropologist* and *Journal of American Folk-Lore*		147.64
TOTAL		$3,383.80

EXPENDITURES

For printing, binding, and mailing		
Anthropologist, Vol. XII, No. 3	$289.91	
Vol. XII, No. 4	596.44	
Vol. XIII, No. 1	378.02	
Vol. XIII, No. 2	331.27	
Memoirs, vol. II, no. 5	192.05	
Reprints	375.27	2,162.96
Illustrations		548.01
Editorial expenses[1]		13.50
Treasurer's expenses		147.51
Secretary's expenses		141.32
Returned subscriptions		4.25
TOTAL		3,017.55
BALANCE ON HAND		366.25

B. T. BABBITT HYDE,
Treasurer.

Report of Auditing Committee

Your auditing committee on the accounts of the Treasurer beg to report that the books are correctly stated and the apparent balances are:

Balance Jan. 1, 1911	$ 316.21	Payments by check	$3,008.70
Receipts during year	3,067.59	Cash payments	8.85
		Balance in bank	366.25
	3,383.80		3,383.80

The balance in bank January 1, 1912, is probably arrived at by deducting from the apparent balance checks due but not presented.

Respectfully,

WALTER HOUGH,
TRUMAN MICHELSON,
Auditing Committee.

Report of the Editor

During the year four numbers of the *American Anthropologist* have appeared, two of volume 12 and two of volume 13, while the third number of volume 13 is in press. Part 5 of volume II of the *Memoirs* has also been published.

In the first place acknowledgments are due to the former editor, Mr Hodge, who took the entire charge of the *Memoirs*, and who has willingly given the present editor advice and assistance at all times, especially in regard to the illustrations. Secondly I have to thank the Secretary, and Miss H. H. Parsons (Mr Hyde's assistant) for the promptness with which they have answered queries, furnished information, and in general contributed their share to the success of the journal, all the more as I have turned over to them matters which the former editor used to attend to.

[1] The bill for "Editorial expenses" for the year has not yet been received, which accounts for this item being so much smaller than last year.

The present defects in the *American Anthropologist* in my conception spring from two principal causes, (1) delay in publication and (2) an insufficient editorial staff. In the last five months, however, there has been a great improvement in respect to the first of these causes, but the absence of the editor from Washington and certain other causes have prevented us from reaping the full benefit of the change.

The make-up of the editorial staff is the next matter to which I wish to call attention. No one who has not had something to do with editorial work can realize how much labor Mr Hodge took upon his shoulders in conducting the journal single-handed. His work comprised the reading and proofreading of long articles, correspondence with authors, the assignment, reading, and proofreading of reviews, and the collection of news items, besides the entire editing of the *Memoirs*, and most of the business management of the *American Anthropologist* and the *Memoirs*. In other words, he combined the duties of business manager, editor-in-chief, literary editor, and assistant editors. If there be another who can satisfactorily perform all of these functions he is the logical man for the position of editor. I am inclined to think, however, that the time has come when it will be inexpedient, even if it is possible, to continue all of these offices under one man.

In the first place a plan is already on foot to place the literary, *i. e.*, review sections, of both the *American Anthropologist* and the *Journal of American Folk-Lore* in charge of a separate board of editors, and have the reviews and notices of periodical literature appear as a separate publication. Under the present system in the *American Anthropologist* any book that happens to be sent in is assigned to some one, and if he accepts the request to review, the book is sent him. Usually a review is forthcoming in course of time, but there are cases in which no reviews have been furnished, although the book has been for two years in the hands of the person who had agreed to review it. The books are furnished for review, and it is manifestly unjust to those who furnish them not to supply some sort of notice. Another set of reviews is furnished by certain anthropologists voluntarily, and the editors have been under great obligations to several gentlemen in this way. This method of obtaining reviews, however, gives an uneven result. Certain works, or certain branches of anthropology, are well noticed, while others are entirely neglected. Books sent in and assigned should be followed up and either reviews should be obtained or the books withdrawn and sent to other students who will review them. All books received should be kept on a check list so that it will be known when such and such a work came in, to whom it was assigned, and when the reviews were furnished. I might add that we ought to be particularly prompt with books furnished by commercial houses whose sales are supposed to be largest immediately after the appearance of the work. Moreover, significant anthropological works should be reviewed no matter whether any copy is received for review or whether or not anyone volunteers such a review. Under the present system it is impossible for either the editor of the *Journal of American Folk-Lore* or the editor of the *American Anthropologist* to spend sufficient time to do all of this along with his other duties. For

this reason I wish to add my recommendation to that of the editor of the Folk-Lore journal that the reviews and periodical literature of the two journals be incorporated into a separate publication under its own corps of editors. If for any reason it should not be considered wise to make this publication separate, still it ought certainly to be conducted as a distinct department of the other journals. The remainder of the journal, or the *American Anthropologist* proper, should be under the editorship of some person whose headquarters have some stability and who can be in close touch with the printers, the illustrators, and the contributors, and who has other facilities for making up the journal. This editor-in-chief could make very good use of two or three associate or assistant editors to handle the Miscellanea and assist him with extra duties, such as the *Memoirs*. The present associate editor has assisted me materially with the Miscellanea, but one or two additional men would be in no way amiss. We need particularly to increase any news and notes from foreign publications. Possibly it might be best to select assistant editors to cover the different departments of Anthropology. However, it is important to remember that the success of any scheme depends on the willingness to work of those who are selected for certain positions, rather than the desirability of the scheme abstractly considered. One man who will really do something is better than a dozen ornamental editors, even if his scientific caliber is inferior.

I have now laid before you the present, to me unsatisfactory, condition of affairs, and await your action. I feel that a journal like the *American Anthropologist* should not be edited from a trunk or a hall bedroom, and am only too well aware how the delay in publication to which this kind of editing contributes brings about haste, and opens the door for errors which a more leisurely method of composition would prevent.

Respectfully submitted.

JOHN R. SWANTON.

The Editor's report was accepted.

The Council authorized the Secretary to insert a notice in No. 3 of the *American Anthropologist* for 1911 to the effect that all authors shall be given three months from issuance of said notice in which to call for cuts used in illustrating their papers, the carriage of the same to be paid for by the authors. After expiration of the said three months The New Era Printing Company may destroy all cuts not called for that were used in illustrating the *American Anthropologist* prior to no. 3 of 1911. On motion the Secretary was also instructed to notify The New Era Printing Company to return to authors, at the expense of the latter, all cuts beginning with no. 4 of the *American Anthropologist* for 1911.

The Committee on Editorial Management appointed by President Fewkes reported as follows:

Your committee has considered the question of the desirability of issuing a journal of anthropological literature to include a summary of the periodical literature of the world and reviews of books bearing on the subject of Anthropology, and beg to submit the following recommendations:

1. That a journal, to be issued quarterly, and to be devoted to the subject above mentioned, be published during the year 1912 under the joint auspices of the American Anthropological Association and the American Folk-Lore Society, provided the latter society desires to enter into this coöperative plan.

2. That the expense of publication be borne proportionally by the two societies, based on the membership of each, and that in cases where a member of one society is also a member of the other, the cost of the copies to which such members are entitled shall be borne equally by the two societies.

3. That Dr Alexander F. Chamberlain be appointed Editor of the proposed journal on the part of the American Anthropological Association, and that the American Folk-Lore Society be requested to make a similar appointment in its own behalf. In this connection it is further recommended that it be the policy of the American Anthropological Association that the reviews of books submitted to it be assigned to as many members of the Association as practicable in order that the scope of the proposed journal may be as wide and the reviews as varied as possible.

4. That the details of distribution be determined by the Secretary of the American Anthropological Association and the Secretary of the American Folk-Lore Society, serving as a permanent joint committee with power to act in all emergencies, and that they determine the method of payment of the expenses of the proposed journal as they are incurred.

5. That the name of the proposed periodical shall be "Current Anthropological Literature."

Respectfully submitted.

F. W. Hodge, *Chairman*,
Charles Peabody,
Clark Wissler, *Committee.*

Additional Report.—Your committee has considered the proposal respecting the appointment of an editorial board in connection with the publications of the Association and beg to report that in its judgment such a plan would not be feasible, since concentration of authority in an Editor and an Associate Editor would, it is believed, better subserve the interests of the publications. Moreover, these officers may always exercise the privilege of submitting to members of the Committee on Publication, or to other members of the Association, any questions regarding the desirability of publishing articles submitted to them, thus obviating the need of the editorial board suggested.

Respectfully submitted.

F. W. Hodge, *Chairman.*

The two foregoing reports were adopted and the committee discharged. The American Folk-Lore Society approved the recommendations of the committee and thus becomes a party to the plan for publishing "Current Anthropological Literature" for 1912.

One of the chief functions of the Association is publication; the choice of an editor is therefore of prime importance. For twelve years Mr F. W. Hodge filled this position with rare ability and without financial compensation. One year ago he declined reëlection, and Dr John R. Swanton, his associate, was promoted to the editorship. But Dr Swanton's duties as field ethnologist seriously conflict with his work as editor. At the end of one year's service the Association has heeded his request to look elsewhere for its editor. At this critical juncture our Treasurer, Mr B. T. Babbitt Hyde, simplified the search as well as the process of selection by notifying President Fewkes that he was in a position to guarantee the editorial expenses of the *American Anthropologist* for five years, conditional on the acceptance by Mr Hodge of the position of Editor.

Mr Hyde's generous and timely action not only guarantees a material reward for excellent and faithful service but also marks the beginning of a new era of usefulness for the Association. He has the thanks of all its members voiced in a letter from its President:

WASHINGTON, D. C., *January 9, 1912.*

Dear Sir:

Mr Hodge has been unanimously elected Editor of the *American Anthropologist* and has accepted the position under the terms mentioned in your telegram. It is universally recognized that under his direction the high standard of the *Anthropologist* due to him in the past will be maintained. Your aid has made this possible.

I regard it an honor to send you the thanks of the American Anthropological Association for your great generosity.

Will you convey our thanks also to all those who have contributed with you to bring about this result?

I have the honor to remain,

Very cordially yours,

J. WALTER FEWKES, *President.*

MR B. T. B. HYDE, 11 Broadway, New York City.

The question of domestic and foreign exchanges was left in the hands of the editorial staff.

Prof. R. B. Dixon and Dr George B. Gordon were appointed to represent the American Anthropological Association on the Council of the American Association for the Advancement of Science.

On motion of the Secretary, the President appointed a Committee on Consolidation composed of three members from the American Anthropological Association: G. G. MacCurdy (chairman), P. E. Goddard, and B. T. B. Hyde; and three members from the American Folk-Lore Society: Charles Peabody (chairman), Clark Wissler, and Stansbury Hagar. This joint committee will formulate the plans for the consolidation of the two societies and report at the next annual meeting, which will be at Cleveland, Ohio, beginning December 30, 1912, in affiliation with Section H of the American Association for the Advancement of Science.

The President appointed a Committee on Nominations consisting of G. G. MacCurdy (chairman), W. H. Holmes, and A. M. Tozzer. The report of this committee was accepted, the election resulting as follows:

President: J. Walter Fewkes, Bureau of American Ethnology.

Vice-President, 1912: R. B. Dixon, Harvard University.

Vice-President, 1913: George B. Gordon, University of Pennsylvania.

Vice-President, 1914: George A. Dorsey, Field Museum of Natural History.

Vice-President, 1915: Alexander F. Chamberlain, Clark University.

Secretary: George Grant MacCurdy, Yale University.

Treasurer: B. T. B. Hyde, New York.

Editor: F. W. Hodge, Bureau of American Ethnology.

Associate Editors: John R. Swanton and Robert H. Lowie.

Editors of "Current Anthropological Literature": Alexander F. Chamberlain and Robert H. Lowie.

Executive Committee: The President, Secretary, Treasurer, Editor (ex-officio), and W. H. Holmes, Charles Peabody, and Pliny E. Goddard.

Council: W J McGee, F. W. Putnam, F. Boas, W. H. Holmes, J. W. Fewkes, A. F. Chamberlain, R. B. Dixon, G. B. Gordon, G. A.

Dorsey, G. G. MacCurdy, B. T. B. Hyde, F. W. Hodge (ex-officio); H. I. Smith, G. H. Pepper, W. C. Farabee, J. R. Swanton, G. G. Heye, H. J. Spinden, T. T. Waterman (1912); W. C. Mills, H. Montgomery, C. B. Moore, W. K. Moorehead, C. Peabody, C. C. Willoughby, P. E. Goddard, T. Michelson (1913); Alice C. Fletcher, C. P. Bowditch, S. Culin, R. H. Lowie, C. Wissler, C. H. Hawes, E. Sapir, P. Radin (1914); A. E. Jenks, S. A. Barrett, W. Hough, A. Hrdlička, A. L. Kroeber, A. M. Tozzer, F. G. Speck, A. A. Goldenweiser (1915).

The incoming President, Dr J. Walter Fewkes, has appointed the following committees:

Committee on Meetings and Program: G. G. MacCurdy (chairman), W. H. Holmes, Alice C. Fletcher, R. B. Dixon, A. M. Tozzer, F. W. Hodge, W. C. Mills, R. H. Lowie, A. Hrdlička, E. Sapir.

Committee on Finance: B. T. B. Hyde (chairman), G. G. MacCurdy, W. H. Furness, 3d, George G. Heye, Clarence B. Moore, C. P. Bowditch.

Committee on Publication: The names of the members of this committee appear on the third page of the cover of this number of the *American Anthropologist.*

Committee on Policy: Alice C. Fletcher (chairman), W J McGee, F. W. Putnam, F. Boas, W. H. Holmes, A. L. Kroeber, G. B. Gordon.

Committee on American Archeological Nomenclature: C. Peabody (chairman), W. K. Moorehead, H. I. Smith, Walter Hough.

Committee on the Concordance of American Mythologies: F. Boas (chairman), J. R. Swanton, A. L. Kroeber, R. B. Dixon.

Committee on Nomenclature of Indian Linguistic Families North of Mexico: F. W. Hodge (chairman), F. Boas, A. L. Kroeber, R. B. Dixon, J. R. Swanton, J. Mooney, A. F. Chamberlain, E. Sapir.

Committee on the Preservation of American Antiquities: W. H. Holmes (chairman), E. L. Hewett (secretary), F. W. Putnam, J. Walter Fewkes, Alice C. Fletcher, F. W. Hodge, G. B. Gordon, G. G. MacCurdy, S. Culin, W. C. Mills, S. Hagar.

President Fewkes opened the first public session of the joint meeting with the following remarks:

Ladies and Gentlemen; Members of the American Anthropological Association: A year has passed since the last meeting of the Association and we have now again come together, bringing from field and laboratory new material to lay before our fellow-workers for their critical examination. It is eminently fitting that we should hold our service in this beautiful building erected by the nation to contain the precious collections gathered from the uttermost parts of the earth as well as our own country. Part of these collections illustrate the physical and cultural history of man, the sciences we cultivate. Our place of meeting should stimulate us with a new enthusiasm and a high ideal of research, and the time of year a new sense of the service to humanity it requires. Although our science has a very practical side, its strength lies primarily in the study of truth for its own sake and thereby the elevation of human character. With your assistance it shall be our effort to eliminate, as far as possible, all personal feeling in our discussions and keep continually in mind the noble ideal that all our work is a service to science.

It has seemed desirable to group our communications in such a way that discussions of methods and principles would be a prominent feature, and it is earnestly hoped that these discussions may be untrammelled by personal feeling, critical when necessary, but always on the highest possible plane. It is evident to all that with so many speakers, all of whom we desire to hear, it may be necessary sometimes for a speaker to curtail his remarks to conform to the time allowed by the committee. Although in such condensation he may feel that he cannot do himself full justice, it is to be hoped that he will make the sacrifice for the sake of others who follow.

Addresses and Papers

The address of retiring Vice-President Roland B. Dixon of Section H on The Independence of the Culture of the American Indian is printed in *Science* of January 12, 1912.

In the absence of President Henry M. Belden of the American Folk-Lore Society, his address on Folk Poetry in America was read by Dr Charles Peabody.

Many of the important papers read at the joint meeting are represented in this report by abstracts. These are:

Investigations among the Plains Indians: Clark Wissler

A preliminary statement of the general plan for work by the American Museum of Natural History among the Northern Plains tribes and the Southwestern Indians was presented in brief, followed by a general comparative résumé of the results in the Northern Plains. Attention was called to recent evidence of the former use of pottery by the Blackfoot Indians and its apparent similarity

in type to that used by the Menomini and the Saulteaux. The chief discussion, however, was confined to ceremonial bundles of the Blackfoot, special attention being called to the great uniformity of structure in the rituals belonging to the same, suggesting that all had a common origin. Certain striking similarities to Pawnee rituals were pointed out as well as correspondence with the Cheyenne. It was noted, however, that the Blackfoot bundles seem to be of a distinct type as opposed to those of the Menomini, Winnebago, Osage, Sauk and Fox, etc. The individuality of the Blackfoot bundle scheme is shown in the peculiar transfer conception by which a bundle may pass from one person to another without restriction. There was also an investment feature in the transfer, that is, while considerable property changed hands when the bundle was secured, the owner could at any time secure an equivalent return by transferring the bundle to another. The transfer-investment character of Blackfoot rituals has not so far been reported among other tribes and may remain tentatively as a Blackfoot characteristic.

The Principle of Convergence in Ethnology: Robert H. Lowie[1]

Dr Graebner in his *Methode der Ethnologie* denies that the principle of independent development is logically on a par with that of historical connection in the explanation of resemblances. He also regards convergent evolution as involving assumptions as to a mystical psychological unity of mankind. Neither of these views is justified. More especially, the apparent mysticism in the doctrine of convergence disappears at once if the supposed identities are recognized not as ethnological realities, but as logical abstractions; not as homologies, but as analogies.

Notes on the Material Culture of the Rio Grande Pueblos: Herbert J. Spinden

The cultural conditions found in the Southwest may be explained by divergent evolution due to a different economic use of the land.

[1] Dr. Lowie's paper on Problems in the Ethnology of the Crow and Village Indians, also presented at the meeting, is published in this issue of the *American Anthropologist*.

The aridity acted as a natural barrier against a people in the hunting stage becoming one in the agricultural stage. The change could be accomplished only by coöperation in the building of irrigation ditches, etc., and by corresponding changes in the habits of life.

The nomadic tribes used the soil extensively: they gathered natural fruits and followed the chase. The sedentary tribes used the soil intensively: they irrigated the soil, built permanent villages, and cultivated the household arts of weaving and pottery making. The minor features of material culture show the fundamental bond between the sedentary Indians of the Southwest and the nomadic Indians of the Plains and Plateau. The following rough classification of the arts may be of interest:

Arts largely resulting from the change to sedentary life: Architecture; pottery; weaving; decorative symbolism; use of white clay in cleaning deerskin; rattles of deer hoof, etc.; use of heart line in realistic art; occurrence of horned and plumed serpents in realistic art; use of sand paintings.

Features of extremely wide distribution not given in the above list: Coiled basketry; bags or cloths of yucca fiber, Indian hemp, etc.; fire drills and pump drills; tubular pipes; grooved stone axes, arrow-heads, etc.; flageolets, flutes, drums, tambourines, etc.

Features that are probably of southern origin: Metates; compound arrows with reed shafts; corn and other agricultural products; details in textiles and ceramics.

Features suggesting connections with the Plains and Plateau: Buffalo shields and covers; war whistles; scalping knives; war lances and other regalia; deerskin shirts and leggings; porcupine quill decoration; decoration of deerskin by perforation; buffalo and elk hide blankets with decorated strip; rabbit-skin blankets; war-bonnets; sinew-backed and horn bows; double quiver with separate bow and arrow cases; grooved arrow rasps and polishers; flint flakes of bone; perforated arrow straighteners; self arrows with blood grooves and painted rings; wickerwork carrying baskets built on a foundation of two crossed sticks; fish trap made by converging walls and willow mat; mats of sewn tule; saddle made of two long narrow cushions; skin-dressing tools; use of brains in tanning.

Some Aspects of the Negro Problem: Albert Ernest Jenks

Immigration.—Since we have a serious negro problem, is it reasonable that this problem be made more difficult by admission into the United States each year of an increasing number of un-Americanized immigrant alien negroes?

There are no United States laws against such immigration. Just short of 40,000 such persons have come to this country in the last ten years; in 1911 we received 6,721. They come from near at hand—three-fourths coming from the West Indies. The West Indies have nearly 6,000,000 negroes, any of whom may come to the United States. America debars Oriental peoples, not because they are inferior, but because they and their culture are so different from American people and their culture. For the same reason we should exclude the "African Black." He should also be excluded because his admission is unfair to the white and also to the negro American, since he makes even more difficult one of America's most perplexing problems.

Miscegenation.—There are two forms of negro-white miscegenation: (1) Legal marriage, permitted in twenty-three states where the unions are largely between negro men and white women; (2) illegal, more or less temporary unions, usually between white men and negro women. Investigation in a certain area shows that 65 per cent of the white wives of negro men are foreign-born girls—usually of Teutonic peoples. Over two per cent of children are born to these marriages. The result of both these forms of miscegenation is an increasing number of mulattoes cemented by color and prejudice to the negro race, while by inheritance they are endowed to a considerable degree with Anglo-Saxon initiative, will, ideals, and desire for fair play—which, because of their color, they can seldom get. These mulattoes are the migrants in the north and west of the United States; they are more migrant than the restless, foot-free white American. The mulatto is the chief factor in the negro problem; the problem is bound to increase, then, in geographic area, in number of discontented negroes, and in its intensity, hand in hand with the increased flow of Anglo-

Saxon blood into the veins of this new American man. All forms of miscegenation between the two races should be made a felony, and the father of children born to one white and one negro parent should be held to support and educate such children.

Who is a Negro?—The negro should be defined uniformly, so that there would be no question of the legal and racial status of any given person, no matter in what commonwealth he may be. To-day there is no such uniformity of laws.

Murderous Race Riots.—The white man's passion against the offending, or suspected, negro is often nothing short of blood vengeance against the negro race. This is seen in the fact that assault against the virtue of a white woman is only one of some three dozen offences for which negroes are annually lynched. In many of these lynchings and burnings murder is not committed in the frenzy of the moment; the mob starts out to lynch or burn—the crime is premeditated. If America is to train her annual armies of immigrant recruits into law-respecting and law-abiding citizens, she must punish to the limit necessary all participants in murderous race riots.

Education.—Each negro child should have, so far as public and private school are concerned, an equal opportunity with the white child to make of himself all that he is capable of being.

Investigation.—A commission should be selected to study every aspect of the negro problem. This commission might well be financed by private funds so as to keep it from the almost certain bias of politics and sectionalism.

Presentation of Specimens of Eolithic Form from Salinelles (Gard), France: Charles Peabody

Dr Marignan (Hérault) recently discovered chipped flints, which he considers to be eoliths. In spite of their localization the specimens are eoliths in facies probably rather than in actual age. Noteworthy is a series of discoidal hammers. The natural fractures of the flint and the outlines of the stones were carefully noted and compared with specimens from the Kent Plateau, Boncelles, etc.

Cacimbas of the Isle of Pines (Cuba): J. Walter Fewkes

The word "cacimba," varying in form, apparently found in several linguistic stocks, is widely spread in aboriginal Latin America, from the Andes in South America to the Greater Antilles. It is supposed by most linguists and by natives generally to be a purely aboriginal term signifying a receptacle, or, in a slightly changed form, possibly another word, a pipe. In the Isle of Pines it is applied to a hill with reservoir-like depressions, and to a landing place called Embocadero de los Cacimbas, near Sigunea bay, but mainly to certain artificial, subterranean, vase-shaped receptacles occurring in various localities. The cacimbas are always constructed under ground, where they are either cut out of the solid rock or built of rude masonry. In a few instances the lower portion is excavated and the upper portion or neck is formed of a wall of undressed stone.

About thirty of these structures were examined in various localities in the Isle of Pines, others being reported from the south coast of the western end of Cuba. They occur near to or far from the banks of rivers, some distance from the seashore, in woods or open fields, singly or in clusters. The largest number was found near Nueva Gerona and Santa Fé, the latter situated in the middle of the island, where considerable quantities of turpentine were once made, as indicated by remains of ovens of undoubted Spanish manufacture. Isle of Pines cacimbas are accompanied, especially where the surface of the ground has not been greatly disturbed, by low, circular mounds, depressed in the middle but with raised rims varying from twenty to thirty feet in diameter, situated about the same distance away and overgrown with *guano prieto* or black-bark, palmettos, and underbrush. The cacimbas average about five feet in depth and four feet in greatest diameter, and the narrowed, neck-like entrance, the rim of which is sometimes elevated a foot above the surface, has an orifice large enough to admit a man. Their inner surface is generally smooth-plastered and blackened, the mortar in which the stones are laid being black, as if impregnated with tar. The floor is flat, circular, sloping slightly to the center, where, in one instance, there is a groove connecting with a covered trench

which opens on the hillside. A thin layer of tar was found covering the floors of several of these structures. When the cacimbas were cleaned out they were discovered to be about half full of rubbish, damp soil, decaying leaves, and other débris. No aboriginal implements or human bones occur in any of them, but there were in one a few fragments of Spanish pottery, the broken jaw of a domestic hog, with other animal skeletal remains. The moist earth in some cacimbas is a favorite habitation for the Cuban crayfish, many specimens of which were taken from one of them near Mr Allnut's home, a short distance from Nueva Gerona. Trenches dug diametrically across the adjacent mounds revealed black layers containing ashes and charcoal, with fragments of tar just below the humus, but no walls or aboriginal objects were observed in these mounds.

The cacimbas of Isle of Pines are almost always and without hesitation ascribed by the natives to the Indians. It is sometimes held that they were constructed by Caribs as storage places for tar and other supplies, as their name implies, and one intelligent person affirmed that the builders were Indians who worked under Spanish direction. It is claimed by others that they were made by white men and were used as receptacles for turpentine, the neighboring mounds being the places where this substance was manufactured. One of those who held this opinion claimed that pine logs were so laid on the mound that their ends were brought to the center and the application of heat caused tar to ooze from them into a pan or small receptacle, from which it was transferred to the cacimba. No reliable data that would prove or disprove any of the current theories were obtainable, but it is certainly strange, if these structures are of Indian manufacture, that no aboriginal objects or implements were ever found with them. Under the circumstances their origin remains one of the unsolved problems of the West Indian culture-history. However, the opinion of an intelligent native of advanced years, who claimed that he was a descendant of one of the Comarco Indians of the Isle of Pines, is worth recording. He said that he had been told by his father, who came from Camaguey, that the cacimbas were constructed by Indians and that he had

never heard that white men made them or used them as turpentine receptacles. Two cacimbas, situated about three miles from Nueva Gerona, where the road to El Bobo forks, sending a branch to McKinley, are called Cueva de los Indios, although there is no cave in the vicinity.

The morphological resemblance of the cacimbas to the chultunes of Guatemala and Yucatan is close. Cacimbas are ordinarily smaller and differ from chultunes in not containing aboriginal objects. If the structures are Indian and pre-Columbian, of which there is doubt, this unique fact is significant as being the only resemblance thus far found in the antiquities of western Cuba and the neighboring peninsula of Yucatan. No evidence can be presented to indicate that they are related to the cave men of Cuba or to those Indians whose skeletal remains were found in the Cueva de los Indios near Nueva Gerona.

The Chultunes of Northern Guatemala: Alfred M. Tozzer

The subterranean, cistern-like reservoirs, called *chultunes*, of northern Yucatan, as described by Mr E. H. Thompson in his paper on "The Chultunes of Labna," seem to have been intended primarily for the storage of water. They are found in most cases in regions where there are no natural sink-holes or cenotes or other available source of water. In a few cases they may have been used as burial places.

In northern Guatemala the country is well watered and there is little need of cisterns for the storage of rain water. The chultunes, however, are far more frequent than in the peninsula to the north. A large number were mapped along the route taken by the Peabody Museum Expedition of 1909–1910. They seem to stretch in long lines connecting the various ruined centers in this region. In addition, several were found in close proximity to the cities themselves.

The chultunes of this region are of two types, the simple, cistern-like, subterranean chamber similar to those in the north, and the lateral-chambered chultun. This second type is met with far more frequently than the first, and consists of a room excavated out of the rock and opening from the bottom of the shaft.

From the fact that these chultunes occur in many places where there is an abundant supply of water, it may be argued that the storage of water is not the primary object of these subterranean rooms. Some were no doubt used as burial places. From a large lateral-chambered chultun at Yaloch a large collection of excellent Maya pottery has been taken. From the manner of occurrence it seems probable that there was a burial here on the floor of the chamber, although no bones of any kind were found still existing in the three feet of earth which had been deposited in the chamber. Three examples of a tall bottomless type of vase were found which are unique. Covers to jars were also common.

Chultunes were also excavated at Chorro, Nakum, and Holmul. From the large number of extensive groups of ruins in this area, and the hundreds of small mounds and chultunes connecting these centers with one another, together with the examples of pottery from this region, it may be seen that here in northern Guatemala we have perhaps the most important center of the Maya culture.

The Mexican Maize Season in the Codex Fejérváry-Mayer: Stansbury Hagar

On sheets 33 and 34 of the Codex Fejérváry-Mayer (Loubat edition) are two series of symbols including four paintings on each page, two above, two below. The four upper symbols, reading from right to left in the usual manner, picture the maturing of the maize crop during a period of four months; the lower symbols represent the deities governing the months mentioned. But the writer has presented evidence in a previous paper on the Elements of the Maya and Mexican Zodiacs[1] that this sequence of deities also represents the zodiacal signs Cancer, Leo, Virgo, and Libra. These signs correspond with the months July, August, September, and October, which correctly represent the maize season described on the Mexican plateau.

The People of Sandao-a: Elizabeth H. Metcalf

In the extreme southern part of Mindanao, the most southerly and largest of the Philippine islands, on the foothills of the beautiful

[1] 16th Internat. Cong. of Americanists, pp. 277 et seq.

volcano which the Spaniards call "Apo" (The Grandfather), live the Bagobos, a pagan tribe of high mentality, docile nature, spectacular in dress, and in some respects very primitive. They call the volcano "Sandao-a" (pronounced Sandowa), "The Sulphurous One." These Bagobos are a mountain people, and to a certain extent nomadic. They understand only the cultivation of mountain rice; and as this necessitates the cutting of a new bit of forest each year for their rice plantation, they are likely to move also each year into the vicinity of the new rice field. Recently they have been brought together into villages by Government order. Although the American arrangement of the tribal wards somewhat curtails the political power of the present head *dato*, he is still highly esteemed by both natives and Americans.

Formerly the wealth of the people was in slaves, animals, *aguns*, and fine clothes. The days of slavery are past; the aguns, or big gongs, they still possess. These are their most important musical instruments; and the magnificence of tone coloring of many large gongs played together is indescribable. The Bagobos have other instruments of percussion, wind, and strings, but these large gongs serve also as a medium of exchange, and a man's wealth is usually reckoned by the number of gongs he possesses.

Their clothes are made from hemp fiber, which the people weave into a cloth, unique in manufacture, and which lends itself admirably to the artistic fashion of ornamentation employed by these people. Of the old embroidery of cross-stitch on coarse Chinese cotton cloth, which the women understood fifty or more years ago, there are still a few samples to be found; but the present style of ornamentation consists of an appliqué in various forms of bright-colored cloth, of embroidery, of beads and tiny pearl disks sewn on in designs. The beads the people purchase from the Chinese merchants, the pearl disks are made from shells, found farther back in the mountains by another tribe living there.

The houses are always built up from the ground—sometimes of bamboo prepared in various ways, sometimes with the frame of wood with the leaves of certain trees laid on thickly for the roof and more openly for the sides. The entrance to the house is by

a notched stick or by a ladder, and the furniture is exceedingly simple. A peculiar feature, especially of the houses of the aristocrats, is the different floor levels. At the extreme end of the house, opposite the door, the floor is often raised from six inches to three feet, and the whole width of the house. This place is for guests and for the heads of the family. I have seen a house of an important old dato with three floor levels; on the highest level only the old dato and his wife and such persons as they might bid could come.

The fireplace is usually near the door, with bamboo tubes of water standing on end nearby; the better class have bamboo frames of various kinds for holding dishes, and always in its proper place in every house, even the poorest, is the *tambara*, the little bowl containing the usual offerings, the simplest form of house altar. The greatest of their altars, the *patanon*, or war altar, is also a house altar. The erection of this altar is allowed to only a very few high datos, and is connected with their most important festival, which occurs sometime during rice planting. The most significant ceremonies formerly attended this festival, which might last from two days to two weeks; but as in other regions of the earth, so here, the incoming of commerce and civilization kills the ancient culture and it is probable that if given at all in its entirety it is only in the remote regions of the mountains that this great festival of the *Ginum* is now observed with all its elaborate ceremonies. The Bagobos have other altars for different places and different occasions; altars for the planting of their corn or rice; for the cutting of their crops; and very often they place an altar with their offerings near a great tree or a beautiful spring or running water, especially if the water is to be used for any ceremony of purification.

A Note on the Personification of Fatigue among the Nez Percés, Kutenai, and other Tribes: Alexander F. Chamberlain

In common with other authorities, Dr Paul Ehrenreich, in his recent volume, *Allgemeine Mythologie* (Leipzig, 1910), takes the view (p. 159) that personifications of abstract ideas, etc., are of little mythological significance, being almost entirely of cultural or ceremonial import. Such personifications as do exist he regards as

not primarily personifications of such qualities, but originally representations of lunar personalities, as, *e. g.*, in the cases of the Greek Hermes-Autolykos (gambling and pleasure) and the gambling-deities of certain North American Indians. According to Ehrenreich, the hunting gods are "not really personifications of the hunt, but almost always the moon god, or at least beings furnished with lunar traits" (p. 160). But this is going too far in the way of panlunarism.

Among interesting personifications of abstract qualities among the North American Indians are *sleep* among the Ojibwa (Schoolcraft) and *hunger* among the Shuswap (Teit). Another case is that of *fatigue* among the Nez Percés and the Kutenai.

As Bartels (*Medicin d. Naturv.*, Leipzig, 1893) notes (p. 235), citing Bancroft (*Native Races*, vol. I, p. 284), among the Nez Percés there was a ceremony participated in annually by all the males of the tribe between the ages of 18 and 40. The ceremony, which lasted from three to five days, had as its most noticeable element the pushing of willow rods down the throat into the stomach, this being followed by hot and cold baths and fasting. The firm opinion of the Indians is that they thereby obtain great bodily strength and power of resistance to fatigue. The ceremony is held in order to overcome *Mawish*, the spirit of fatigue. This is the Nez Percé "spring-medicine," reported on recently by Dr Spinden. There are certain identities and resemblances in Kutenai and Nez Percé mythology, etc., that deserve careful study (one curious item is the presence in each of a character with *one* leg). *Mawish*, of course, is the Chinook jargon word for animal (*e. g.*, deer), and the deer figures prominently in the dances, etc., of the Kutenai.

Initial and Terminal Formulæ of Kutenai Tales:

Alexander F. Chamberlain

Although, in the adverb *pik'āks*, the Kutenai language has a word corresponding to our "long ago," "once upon a time," etc., so familiar as an initial formula in the tales and legends of many lands, this term does not appear as the customary beginning of such stories as have been recorded in the native text.

In narration the Kutenai employs the "historic present," as the grammarians term it, adding thus to the vividness of the story told. The great majority of the tales begin with a verb in the present tense, therefore, not with such a phrase as our "once upon a time," with its verb in the past tense. Examples of Kutenai initial formulæ are:

Kānaquē Skínkuts, Coyote is traveling.
Kānaquē tlántlā, Grizzly-Bear is traveling.
Káusākā'ne Wŏ́tak, Frog is there.
Kŏ́nitlāinē Skínkūts, Coyote is in his house.
Kŏ́nitlā́inē G'ŏ́tsāts, Chipmunk is in his house.
Tsináqē Skinkūts, Coyote sets out (starts off).
Kāktlūnām'nē, There is a village.
Nātlqŏ́nē Djáis, He carries his brother on his back.

Very seldom is the order as above indicated inverted, as, *e. g.*, *Mitskákas Káusāk'á'nē*, "The Tomtit is there." The "Tale of Seven-Heads" begins: *Wistátlātlām sāhánē*, "Seven-Heads is bad"; a tale of the owl, *Kúpī tsákētláine*, "The Owl is a great thief." The term *äsmátlnē*, "together," begins a tale, as, *e. g.*, *Äsmátlnē tsináqē Skínkūts áqkī Náik'yū*, "Coyote and Fox set out together," although the formula *Skínkūts äsmátlnē*, etc., is also used.

Among the Kutenai, as with some other Indian tribes of the Oregon-Columbian region, the coyote who figures so largely in myth and legend is represented as being "on his travels"; so, too, with certain of the other animal characters. *Kānáqe Skinkúts* is the typical beginning of most of the stories in which he plays the chief rôle; *tsináqē*, "he starts off," "he sets out," is another initial formula of frequent occurrence in the animal-tales. The word *Káusāk'áinē* signifies "he is at," "he stays," "he stops," "he is there," "he is." Such beginnings as *Kŏ́nitlā́inē*, "he is in his house," "he is at home," and *Káktlūnām'nē*, "there is a village," are quite picturesque.

Often there is no terminal formula in Kutenai stories. A common term, however, is *tágas*, "ended," "enough," "done," "finished." The phrase *tlátlŏ́nē*, "there is no more," also occurs. The terminal *Kāpét*, used by some of the Indians, seems to be the *Kopét* of the Chinook jargon, modified by supposed derivation from Kutenai *K'āpē*, "all."

The Allentiacan Linguistic Stock: Alexander F. Chamberlain

All the evidence in hand indicates that the language (extinct in the 18th century; represented by the *Grammar and Vocabulary* of de Valdivia, published in 1607 and 1608, reprinted in 1894 by Medina) of the Allentiacs, or Huarpes, forms an independent linguistic stock, the *Allentiacan*, as it may be called. The Allentiacs, according to Boman, were quite a savage people and unrelated to the tribes of the Andean valleys. This Argentinian people inhabited, at the time of the Spanish conquest, the plains about the great lagoons of Huanacache, extending probably to the western slopes of the Sierra de Córdoba, and southward to the northern parts of San Luis and Mendoza. The Allentiac linguistic material has been discussed by de la Grasserie (1900) and Mitre (1894 and 1909).

The Bororoan Linguistic Stock: Alexander F. Chamberlain

There can be no doubt of the status of the language of the Bororó Indians of central Matto Grosso (Brazil) as an independent stock, as suggested by von den Steinen as early as 1886, or a little before that. Brinton, in his *American Race* (1891), failed to recognize this, or had not noticed von den Steinen's statement, and classed them incorrectly as Tupian. It was only in 1888, as a result of the second Xingú expedition, that the identity of the so-called "Coroados" branch of the stock with the genuine old Bororó was established. Conflicts with the whites have sadly reduced the numbers of the Bororó. Their characteristic area, as defined by Frič (1906) is "the entire course of the S. Lourenco river as far as its union with the Cuyabá, where they come into contact with the Guató." Farther north they occupy "both banks of the Araguaya right across the road that leads from Cuyabá to Goyaz." In the first half of the 18th century these Indians roved about the region of the Xingu-Araguay watershed in central Matto Grosso. Later on, the so-called "Borroró do Cabaçal" settled on the upper Paraguay. The vocabulary of 360 words given by von den Steinen in his *Unter den Naturvölkern Zentral-Brasiliens* (1894) is the most useful linguistic material of the Bororoan stock. Other

vocabularies are given by Caldas (1899) and Frič and Radin (1906); the last print also a vocabulary from Boggiani.

The Calchaquian Linguistic Stock: Alexander F. Chamberlain

The character of the Calchaquian language and the extent of the area over which it prevailed have been the subject of much discussion and dispute. Some have held that the Calchaqui, Catamareño, or Cacana tongue was nothing more nor less than a dialect or *patois* of Quechua, spoken in Tucuman, etc. Others seek to connect it with Aymará, Atacameñan, etc. The Calchaquis may have been a mixed people, as Lafone-Quevedo and Ehrenreich maintain. But there was an essential Calchaquian (or Diaguitan, as Boman prefers to call it) culture, and with it went a language which was still spoken in the 17th century, and, from all appearances, seems to have been an independent form of speech, deserving rank as a linguistic stock. Boman (1908) failed to find any trace of the existence in Paris of the grammar and vocabulary of Calchaqui said to have been written by the Jesuit missionary Alonso de Barzuna (or Barcena) in the 16th century. The Calchaquian linguistic data consist of place-names, etc., discussed, *e. g.*, by Lafone-Quevedo, in his *Tesor de Catamarqueñismos* (1898). At its greatest extent the Calchaquian (rather than Catamarcan or Diaguitan) stock may be said to have occupied a territory of varying breadth, between about 23° 30′ and 32° 30′ south latitude. For the archeology of this region much knowledge is due to the researches of Ambrosetti, his colleagues and students.

Recent Opinion as to the Position of the American Indians among the Races of Man: Alexander F. Chamberlain

The author discussed briefly the various theories in the light of the scientific literature of the last few years—the autochthonous, the European, and the Asiatic. The protagonist of the theory of the autochthonous origin of American man was the late Professor Ameghino, the Argentinian paleontologist, who derived him from the higher simians in southern South America. Prof. G. Sergi,

the Italian anthropologist, who looks with some favor on Ameghino's views, recognizes (he takes a rather polygenetic view of human origins) among his separate human races a *facies Americana*. The old view of Boyd Dawkins (resurrected by him, in a somewhat modified form) that the Eskimo are the representatives or the descendants of European cave-man, still finds favor in certain quarters, but the recognition of the interior origin (in the region east of Hudson bay) of the Eskimo as demonstrated by Boas, et al., places this theory rather out of court. That the American race is simply a Mongolian type, a view once much in favor, has lost its standing since the results of the Jesup North Pacific Expedition have become known. The data acquired concerning the so-called "paleo-Asiatic" peoples (Chukchee, Koriaks, Kamchadales, Yukaghir, etc.) of northeastern Asia and the peoples of northwestern North America, demonstrate that the "paleo-Asiatic" people, at least (as the Asiatic Eskimo did later), must have crossed from America to Asia long subsequent to the arrival of the ancestors of the American race from Asia (if they came by way of Bering strait, as now seems reasonable). The American Indians may thus be considered as an Asiatic people (sprung from the proto-Mongolian stock), considerably modified by their New World environment. By a refluent wave of migration they have "Americanized," as it were, a large section of northeastern Asia.

The Mourning Ceremony of the Southern Paiutes: Edward Sapir

The main ceremony of the Southern Paiutes of Utah, Arizona, and Nevada is an annual mourning ceremony or "cry." The expenses of such a ceremony, which generally lasts for five days in June or July, are borne by two men, one of them a close relative of a recently deceased member of the tribe. Sometimes neighboring bands are invited to take part in the ceremony. The place of the mourning ceremony varies from year to year and is decided upon at a preliminary council meeting. The essential elements of the ceremony are the singing of numerous mourning songs and the offering of valuables, such as baskets, articles of clothing, and horses, in memory of the dead.

The songs, which are accompanied by rattles held by each singer, are to be classified into four sharply distinguished types—roan songs, bird songs, coyote songs, and mountain-sheep songs. Each of these has its characteristic type of melody and accompanying movements on the part of the singers. There does not seem to be any idea of a grouping of the participants of the ceremony into four societies singing these different types of songs; one may join in the singing of any class of songs and leave one group of singers for another. There is, however, a song leader for each type of song. This merely means that certain people are proficient in the singing or composing of particular classes of songs. The texts of the songs are in comparatively few instances in Paiute, but belong to a language that is unintelligible to the singers. There is reason to believe that the types of songs, the actual song texts, and perhaps the whole ceremony, are borrowed from the Yuman tribes to the west. There is a possibility that the song texts consist of an elaborate system of burdens.

At various stages during the singing, which forms the major part of the ceremony, ceremonial "cries" take place which are conducted by a cry leader. On the last night of the mourning ceremony, during which it is forbidden to sleep, the articles which have been set aside as offerings to the dead are burned on a funeral pile; horses are shot, and valuable articles which have been exposed as offerings may be taken by others and replaced by objects of less value. It is evident that the Paiute mourning ceremony bears considerable resemblance to mourning ceremonies of various Californian tribes.

Cephalic Type Contours: William C. Farabee

The main object aimed at in all physical measurements is to find characters that shall be peculiar to the race or group of people under investigation. Under the old methods little attention was given to actual measurements of characters, except in so far as they aided in the determination of ratios or indices. The various indices for each individual were calculated and the average and range determined for the whole group. It was believed that these ratios were more constant than were the absolute dimensions, and

hence general conclusions were based upon the ratios obtained from short series.

Recently, improved methods have shown that these ratios have as wide range of variability as the measurements themselves, and it has been found necessary to apply rigid statistical methods to the actual dimensions. The most constant characters of a large number of individuals must be observed and selected for measurement. In the past the head measurements have been considered of most importance and most constant. For the De Milhau Harvard Expedition to South America a cephalometer was devised that allowed the taking of measurements from the center of the auricular passage to any desired position on the head or face. For comparative group studies these dimensions were most satisfactory. Yet one very important factor was lacking, viz., the angles between the lines, which prevented any possibility of graphic presentation. To overcome this defect and to minimize as far as possible the importance of definitely locating all the positions mentioned, a protractor was attached to record these angles. This made it possible to locate the points to which the measurements were made, whether or not the positions were correctly determined. All measurements and angles were taken with reference to the horizontal plane of the Frankfort Agreement. The vertical height is perpendicular to this plane, and this line is marked zero in the scale.

When all results have been worked out according to correct statistical methods it will be possible to plot the *means* of all angles and measurements, and when the ends of these lines have been connected by means of a spline a *type contour* will result. In the same way type contours of different related or unrelated groups in races may be made. These contours should be plotted on thin paper and superposed for comparative study. The advantage of the method is that it may be applied to the cranium as well as to the living head and direct comparisons made to determine relationships. Head measurements may be reduced to cranium measurements by allowing for the thickness of the cranial tissues.

Some Factors in the Differentiation of Human Types: Robert Bennett Bean

Dr Bean has studied random samples from four groups of mankind—Europeans, Africans, East Indians, and Filipinos—and in each group three types that are similar in physical characteristics may be segregated. He has heretofore called these three types Primitive, Australoid, and Iberian, but here they will be designated A, B, and C, respectively.

Type A is small, brachycephalic, and platyrrhine.

Type C is tall, dolichocephalic, and leptorrhine.

Type B is medium in stature, mesocephalic or mesaticephalic, and platyrrhine.

From the standpoint of growth other factors may be utilized to differentiate the types. It is known that the relative total leg and arm length increase from birth to maturity, the face increases in size, and the umbilicus descends. To make these factors relative we may use the length of the leg in relation to stature, the length of the arm in relation to stature, the size of the face in relation to the size of the head, and the position of the umbilicus in relation to the position of the suprasternal notch and the symphysis pubis. Dividing the length plus breadth of the face by the length plus breadth of the head gives a cranio-facial index, which is low at birth and high at maturity. Dividing the distance of the umbilicus from the symphysis pubis by the distance of the umbilicus from the suprasternal notch gives the omphalic index, which is high at birth and low at maturity.

The three types may be assembled by the use of these factors according to the stage of development that each represents, as follows:

TYPE A	TYPE C	TYPE B
Hypo-onto-morph	*Meso-onto-morph*	*Hyper-onto-morph*
Small	Relative total arm length intermediate	Large
Small	Relative total leg length intermediate	Large
Small	Cranio-facial index intermediate	Large
Large	Omphalic index small	?

Type A is less developed than type B, and type C is intermediate.

Additional factors, mainly descriptive, have been utilized to differentiate the three types, the form of the external ear or pinna enabling one to classify any individual after close scrutiny. The distinctive differences of ear form refer particularly to the inversion or eversion of the outer rim of the concha, and the rolling in (forward) or rolling out (backward) of the helix. These changes are especially to be seen at the lower part of the ear in the region of the tragus and anti-tragus, and the helix and anti-helix. The ear of type A has an inverted concha—the tragus and anti-tragus appear to be pushed in—and an inrolled helix, giving it a trumpet or bell shape. The ear of type C is the reverse of this: the concha is everted—the tragus and anti-tragus appear to be pulled out—and the helix is rolled back at its lower part. The ear of type B appears to be intermediate between these extremes. The ear type is more distinctive than any other factor, and may be utilized more readily; therefore it is more serviceable.

The nose form is useful in the differentiation of type, although it is not so good as the ear form. The nose of type A is infantile. The bridge and root are wide and depressed, the nostrils flare and open forward rather than downward. The nose of type B is wide, long, and high, with depressed root, straight, high bridge, and nostrils that are wide and open only slightly forward, and downward. The nose of type C is narrow, long, and high, with high root and bridge, and nostrils that open downward.

The soundness of the teeth in types A and B is noteworthy, whereas the teeth of type C are very unsound.

Type C is more susceptible to diseases of the epithelial tissues, or those organs derived from the primary epithelium, such as the alimentary canal and the central nervous system; whereas types A and B are more susceptible to diseases of the mesothelial tissues or the organs derived from the primary mesoderm, such as the circulatory system.

Types A and B seem to be linked together in many respects, and in this they are different from type C, which seems a more clearly differentiated type than the other two. The three types differ slightly in the different groups of mankind, and resemble the type

that is distinctive for each group. For instance type A is distinctive for the Filipinos included in the present study, therefore types B and C resemble type A among the Filipinos; type B is distinctive for the Africans, therefore types A and C resemble type B among the Africans; and type C is distinctive for the Europeans and East Indians, therefore types A and B resemble type C among these peoples.

Type C apparently retains its characteristics in all the groups more specifically than do the other types. As this type is so distinct in at least the four groups thus far studied, besides forming such a considerable part of these four groups, Dr Bean concludes that this type in the four groups originated from the same stock. He therefore believes that the tall, long-headed blond Northern European, the small, long-headed brunet Southern European, the tall, long-headed, straight-haired black East Indian, and the tall, long-headed, kinky-haired African are derived from this original stock. Their ear form is identical, and other factors confirm this evidence. Existing differences may be accounted for by hereditary, climatic, and cultural conditions.

Linguistic Classification of Algonquian Tribes: Truman Michelson

Algonquian tribes linguistically fall into four major groups, to wit, Blackfoot, Cheyenne, Arapaho, and Central-Eastern. The last may be subdivided into Central and Eastern. Of the Central subdivision, Ojibwa, Ottawa, Potawatomi, and Algonkin form a special branch; and Peoria and related dialects distinctly belong with them, but the latter are further removed from the others than any one of those from one another; moreover, Peoria and its nearest relatives are in certain respects more archaic in their phonetics, and in some grammatical categories have more northern affinities. Menominee has the closest relations with Cree-Montagnais, though also intimately connected with Fox. Fox, Sauk, and Kickapoo vary from each other but slightly; the differences are mainly in intonation and idiom. The first two are more nearly related than either is to Kickapoo. The last is closer to Fox than to Sauk. The three distinctly belong with Cree-Montagnais and Menominee as opposed

to Ojibwa, etc. Shawnee is very close to Fox, Sauk, and Kickapoo, but in certain respects agrees with Ojibwa, etc., and the Eastern subdivision. Natick clearly belongs with the Central and not with the Eastern subdivision. In some categories it has affinities with the Ojibwa branch, but in others it is varied, and has some marked characteristics of its own. Delaware decidedly belongs to the Central and not to the Eastern subdivision, despite the popular notion to the contrary. The material in Zeisberger is a medley of Unami, Unalachtigo, and Munsee. It is sufficiently clear that the linguistic relations of these were different; but the existing material is so unsatisfactory that it is premature to make any definite statement. The Eastern subdivision consists (today) of Micmac, Passamaquoddy, Malecite, Penobscot, and Abenaki. Micmac is specialized in that it employs a conjunctive instead of an independent mode; but the popular notion that it differs widely from the other members of the subdivision is mistaken, as is the belief that the Eastern subdivision belongs with the Delaware. On the contrary, the relations of the group are distinctly with Fox, etc., and Shawnee.

Dr Michelson's paper is to appear in amplified form in the Twenty-eighth Annual Report of the Bureau of American Ethnology.

The Status and Development of Canadian Archeology:
Harlan I. Smith

The archeological work of the Geological Survey of Canada since June 15, 1911, the date of Mr Smith's appointment as Dominion Archeologist, has been divided into two main groups—the activities for diffusing archeological knowledge by such means as museum exhibits, guidebooks, and lectures, and those for increasing such knowledge by exploration, original research, and systematization.

The national collections have been classified tentatively into groups corresponding to the five ethnological culture areas. This grouping may be modified with the progress of research. The collection from the southern coast of British Columbia and the one from the southern interior of British Columbia are representative, and the collection from Ontario is large. The other provinces of the

Eastern Woodlands, the Plains, and the Arctic are hardly represented at all, and there are practically no data at hand concerning them. Popular guides have been prepared for the two western archeological areas, and work is progressing upon similar guides for the others. A series of lantern slides illustrating the archeology of Ontario has been made; general and topical labels for the collection are in the hands of the printer; duplicates of these will probably be furnished to the other museums throughout Canada, which with duplicate specimens, casts, and photographs, when supplied to these museums, will make the archeological work truly national.

An archeological survey of the Dominion is being organized, a reconnaissance has been made of some of the village sites in Ontario, and a survey of Brantford township has been completed by Mr W. J. Wintemberg. A scheme for systematizing and digesting the scattered and incomplete archeological data at hand and to be received in the future has been inaugurated. The coöperation of railroad officials, the North West mounted police, Indian agents, and geological explorers has been secured.

It is proposed to explore the less well known parts of Canada beginning with intensive exploration at one site in each of the great cultural areas, in order that the results in the way of collections and monographs may be used as standards to which to refer for identification the results of future exploration obtained in bordering areas where we may expect to find mixed or superimposed cultural material.

It is planned in the near future to make a reconnaissance of the Plains from which there is practically no material today available, to continue scientific exploration into the northern interior of British Columbia, using the Grand Trunk Pacific as a base, and to do an intensive piece of excavation along the St Lawrence. Next the shell-heaps of the Atlantic coast may be examined.

The Analysis of Chippewa Music: Frances Densmore

The points discussed and the results arrived at in Miss Densmore's study are here summarized: Environment of Chippewa Indians,—possible influence of natural surroundings upon musical

expression,—difference between expression by means of tone and expression by means of musical intervals,—intonation of Chippewa singers more correct on large than on small intervals,—various classes of the 340 songs under analysis, two forms of analysis, melodic and rhythmic,—difference between tonality and key,—large proportion of Chippewa songs are major in tonality, but large proportion of intervals are minor,—average interval in 340 songs determined by reducing the 8286 intervals to terms of a semitone, the result showing the average interval to contain 3.1 semitones, or one-tenth of a semitone more than a minor third,—size of interval largest in songs of the pipe dance and moccasin game, and smallest in songs connected with gifts,—interval-formation noted most frequently in songs recorded at most primitive settlement,—interval of the fourth shown to characterize 21 songs concerning motion and 15 songs concerning animals,—consideration of the five-toned scales,—permanence of the fifth,—feeling for overtones of a fundamental indicated by structure of melody,—*interval* as melodic nucleus and *rhythmic unit* as rhythmic nucleus of Chippewa songs,—examples of development of each,—origin of songs in dreams,—analysis of dream state and influences acting upon it,—structure of songs shown to be harmonic, purely melodic, and melodic with harmonic framework,—average speed of drum in 340 songs compared with average speed of voice,—ability of the Indian to maintain two rhythms at the same time,—key of Chippewa songs compared with key of sounds produced by insects according to Dr Gardner,—why do Chippewa sing?—characteristics of songs of love and grief,—detailed analysis of moccasin game songs with relation to the nature of the game and the mental state of the players,—a majority of Chippewa songs shown to be connected with an unsatisfied state of mind.

The papers read of which the Secretary was unable to obtain abstracts were:

The Anthropology of the Pueblos: A. Hrdlička. (To appear as a bulletin of the Bureau of American Ethnology.)

Notes on the Words and Music of the "White Captive" Ballad: Charles Peabody.

A Comparative Sketch of the Menominee: Alanson Skinner.

Quechua Folk-Music: W. C. Farabee.

The Permanent Protection of the American Indian: Franklin W. Hooper.

Notes on the Chippewyan, Sarcee, and Kiowa Apache: Pliny E. Goddard.

Amalgamation in Minneapolis: A. E. Jenks.

Results of Field-work among the Hurons of Lorette (Quebec), Anderton (Ontario), and Wyandotte (Oklahoma): C. M. Barbeau. (To be printed in full in one of the annual reports of the Geological Survey of Canada.)

The following papers were read by title:

William Carter, Bensontown Homer: Phillips Barry.

An Early Cranium of Homo Sapiens from a Cavern at Unterleseče, near Trieste: Harris H. Wilder.

The Distribution of the Spear-thrower in South America: M. H. Saville.

Some Analogies between the Pottery of the Southwest and that of the Predynastic Period in Egypt: A. V. Kidder.

Early History of the Yuchi Indians: John R. Swanton.

The Relation of the Quickness of Learning to Retentiveness: D. O. Lyon.

Cayuga Notes: Grace E. Taft.

DISCUSSION AND CORRESPONDENCE

THE METHODS OF ENGLISH ETHNOLOGISTS

In a letter with regard to Dr W. H. R. Rivers' "declaration of independence from the traditional point of view of his compatriots," viz. "the idea of evolution founded on a psychology common to mankind as a whole," Dr R. H. Lowie (*Science*, XXXIV, 1911, p. 604 f.) concludes: "The significant fact remains that one of the most distinguished of English ethnologists now finds himself in substantial agreement with the position generally held in America." Dr Lowie seems to imply that the attitude in America is in common agreement as to the multiplex cultural, with correspondingly various evolutionary, development, and that Rivers is the only English ethnologist who has come to this conclusion.

Dr Lowie refers to more than one American writer who has recognized this question of "dispersive evolution" and multiplex cultural development. He has, however, made no reference to what the present writer finds one of the most crucial discussions of the whole question of comparative ethnology, to wit, Dewey's article on "The Interpretation of Savage Mind," which appeared in *The Psychological Review* ten years ago (vol. 9, 1902, pp. 217–230).[1] Dewey says:

"Comparison as currently employed is defective—even perverse—in at least three respects:

"(1) It is used indiscriminately and arbitrarily. Facts are torn loose from their context in social and natural environment and heaped miscellaneously together, because they have impressed the observer as alike in some respect. Upon a single page of Spencer (Sociology, I, 57) . . . appear Kamschadeles, Kirghiz, Bedouins, East Africans, Bechuanas, Damaras, Hottentots, Malays, Papuans, Fijians, Andamanese—all cited in reference to establishing a certain common property of primitive minds. [Query: Is he silent about "THE GOLDEN BOUGH" because its pages offer lists too long for insertion as illustration?] What would we think of a biologist who appealed successively to some external characteristic of, say, snake, butterfly, elephant, oyster, robin in support of a statement? And yet the people mentioned present widely remote cultural resources, varied environments and distinctive institutions. What is the scientific value of a proposition thus arrived at?

[1] When the above was written Professor Boas' review of Graebner's *Methode der Ethnologie* (*Science*, Dec. 8, 1911) had not appeared.

"(2) This haphazard uncontrollable selection yields only static facts—facts which lack the dynamic quality necessary to a genetic consideration.

"(3) The results thus reached, even passing them as correct, yield only loose aggregates of unrelated traits—not a coherent scheme of mind."

I agree with Dr Lowie that "questions of priority or misunderstanding are relatively unimportant"; at the same time, just as he feels called upon to correct an apparent misapprehension on the part of Dr Rivers as to the methods of American workers, so the present writer would like to assure him that were he (Dr Lowie) "telescopically gifted, he would assuredly read nothing but amazement and surprise" in the eyes of some, at least, of the English anthropologists, "as they peruse his extraordinary [implied] characterization of their activity." For Royce and the American ethnologists are not the only ones who have recognized the principle that "not Quantity, but Order, is the fundamental category of exact thought about facts"; and it was an Englishman who wrote: "For no definite precept can be more than an illustration, though its truth were resplendent like the sun, and it was announced from heaven by the voice of God. And life is so intricate and changing, that perhaps not twenty times, or perhaps not twice in the ages, shall we find that nice consent of circumstances to which alone it can apply." "It is," says Tylor, "of as little use to be a good reasoner when there are no facts to reason upon, as it is to be a good bricklayer when there are no bricks to build with." (*Early History of Mankind*, p. 56.)

As a student for three years in one of the larger English universities, I have had impressed upon me the principle of caution and critical attitude in dealing with anthropological data, as well as the necessity of finding comparative culture that is comparable before making inductions —and this with a thoroughness and emphasis to which I have found no comparison whatsoever as a student in America. By way of introduction to a thesis presented at Oxford nearly two years ago, I said in part, as regards method:

"Our material must be gathered from the same setting, so far as the facts may be supposed to be related, the one to the other. The method by which it should be collected must be at least two-fold: first, *intensive;* second, *comparative.* By *intensive*, we mean that no result is of any value unless you have carefully and, so far as possible, exhaustively, treated the particular case with which you are engaged. It will not be sufficient to say that you have found such and such correspondences and such and such differences. This has little worth unless you go further and ascertain how far these may be held to be the total of correspondences and the total of differences; and, perhaps more important still, to what extent these similarities are more than mere chance correspondences and represent

really efficient factors. Now, it may be that these factors are not equally efficient; accordingly, it is incumbent upon us to discover the supremely efficient ones and to assign them their due place in a hierarchy of values. To be *intensive*, then, means, merely to be thorough in our study of each individual case that we take up. The importance of this thoroughness cannot be too much insisted upon, since anything short of it, if it does not actually vitiate results, at least gives them no claim to our respect. A first glance and superficial consideration of certain relations may point obviously in one direction; while a more thorough understanding of the case, involving a study of closely related conditions, may lead us to quite other conclusions. A most difficult thing to decide, for example, is whether the given correspondences are merely matter of fact ones or are intimately related.

"An intensive study is a necessary preliminary to the understanding of any particular case. But the conclusions deduced from a study of any given case may not be applicable to any other than itself, indeed may be contradicted by the conclusions of some other case. Hence, in order to adduce any principle or law or tendency, we must make a study of many cases—that is, we must study comparatively the individual cases which have been studied intensively. We must synthesise the results of these various analyses.

"In our comparative study we must bear in mind this important consideration, viz. that comparisons must be of like individuals or of like groups: there must be a common background, a common setting for the trait or tendency whose relational aspect we study, since these are colored and conditioned by all sorts of external and internal circumstances and 'cribbed, cabined and confined' by social influence and local prejudice. We must know something of these extraneous as well as of these inner influences before we can make true comparisons.

"In no aspect of the problem has the comparative method been more abused than in its anthropological aspect. Students have serenely ignored the important truth that facts about the life and beliefs of a people can receive no interpretation aside from their setting. A vast quantity of similar concretes ruthlessly abstracted from their proper setting proves nothing by this multiplicity beyond that same resemblance by virtue of which they were brought together. Anthropological treatment has almost invariably suffered from the results of such inane methods and the monotony should be broken by more rational ones. . . . And, most of all, should these facts be counterbalanced and offset by any inference drawn from whatever masses of material and give to all evidence its due weight. For that reason, in every comparative study, it seems wise and safest to study with utmost care a few tribes rather than glean at large from many fields."[1]

[1] My entire anthropological training had been English, and both my examiners (the Reader in Psychology at Oxford, and the Reader in Ethnology at Cambridge) were English!

This thesis, an attempt to study the conditions of the development of personality among savages, was submitted to the anthropological department of one of the universities in this country, kept by them some eight months, and finally returned to

Dewey's words may have resounded to good effect through the corridors of Chicago and of Columbia, but a sleeping, dogmatic formalism still lurks in some nooks and crannies of other American institutions known to the writer, where methodology limps lamely in the ruts of a century ago. Indeed, in view of the fact that in more than one of the larger American universities, courses based on Spencer's *Descriptive Sociology* still flourish, and facile deductions of universal import out-Spencering Spencer himself still evolve, it is time to look to ourselves as well as to look abroad.

That some, at least, of the English anthropologists share the "American" view as to multiplex origins—a view that seems to me no more American than English—I know from my close acquaintance with their methods and the manner of presenting their subjects to classes. Indeed, were I to speak from my own experience, I should be forced to say—what, of course, is true only in my own experience—that ready inference from insufficient premises is characteristically American, while caution, broad and critical survey, and absolute lack of any tendency toward dogmatic assertions best flourish on English soil. Balfour, who has devoted some thirty years to comparative technology, was ever and anon pointing out the different lines of evolution in different areas and the caution with which we must regard any tendency as being general, or applicable to an area where it has not actually been found.

If I should forget all else about Marett, Tylor's successor as Reader in Social Anthropology, I could never forget that he was forever cautioning us against the liability of taking apparent for real similarities, and the necessity of making comparisons, if at all, from culturally similar regions. His criticisms of the Frazerian method and his departure from Frazerian interpretations and inductions seem to have received little attention in America and a word in that regard may not be out of place here. His views seem to me of such intrinsic value, aside from their bearing upon the immediate topic of discussion, and so little appreciated on this side of the water that I beg leave to make use of the following extracts which will present his point of view more correctly and convincingly than any comment of mine.

---

me without a word of comment. Either it was a worthless subject, a wrong method, or an impossible solution. To criticize either one's method or one's result is helpful and cause for gratitude; to ignore one's interest and effort altogether is, to say the least, tantalizing. But perhaps as Mr Findlay says, "life would not be tolerably agreeable if it were not for its amusements."

With regard to his use of the term "pre-animistic," for example, Marett says (Preface to *The Threshold of Religion*):

"What I would not be prepared to lay down dogmatically or even provisionally is merely that there was a pre-animistic *era* in the history of religion, when animism was not, and nevertheless religion of a kind existed. For all I know, some sort of animism in Tylor's sense of the word was a primary condition of the most primitive religion of mankind. But I believe that there were other conditions no less primary; moreover, I hold that it can be shown conclusively that, in some cases, animistic interpretations have been imposed on what previously bore a non-animistic sense. But, with regard to the use to which the word 'pre-animistic' has been put by such writers as Dr Preuss, Dr Farnell, Mr Clodd, Mr Warde Fowler, Mr Hodson, and others, I take it . . . that 'non-animistic' would have served most of their purposes almost as well."

I am told that a renowned head of one of the large departments of one of our largest universities tells his classes the following: "In all primitive religions there are these four elements: Magic, Tabu, Animism, and Totemism." Such was the up-to-date nineteen-eleven pronouncement. Compare with this the following from Marett's article on "Religion (Primitive)" in volume 23 of the *Encyclopædia Britannica*, where he says (p. 63):

"This fundamental homogeneity of primitive culture, however, must not be made the excuse for a treatment at the hands of psychology or sociology that dispenses with the study of details and trusts to an *a priori* method. By all means let universal characterization be attempted—we are about to attempt one here, though well aware of the difficulty in the present state of our knowledge—but they must at least model themselves on the composite photograph rather than the impressionist sketch. An enormous mass of material, mostly quite in the raw, awaits reduction to order on the part of anthropological theorists, as yet a small and unsupported body of enthusiasts. Under these circumstances it would be premature to expect agreement as to results. In regard to method, however, there is little difference of opinion. Thus, whereas the popular writer abounds in wide generalizations on the subject of primitive humanity, the expert has hitherto for the most part deliberately restricted himself to departmental investigations. . . . The anthropological expert . . . insists on making the primitive point of view itself the be-all and end-all of his investigations. The inwardness of savage religion—the meaning it has for those who practice it—constitutes its essence and meaning likewise for him, who after all is a man and a brother, not one who stands really outside."

A decade ago (see *Classical Review*, XV, 1901) this writer was remarking upon the copious pigeon-holes into which theorists were shooting the raw facts of anthropology more or less at random—simply because

they *had* to fit somewhere. Little wonder that Westermarck's array of facts and authorities gave the Oxford don somewhat the sensation of an avalanche of books about to fall on one's head. "Not quantity but quality" is the one strain that runs through all his criticisms and discussions, with an undertone of "method! method! method!" For example, in a review of the second volume of Westermarck's *Origin and Development of the Moral Ideas*, we read (*Athenæum*, April 3, 1909):

"To lack of control on the part of the live memory is chiefly due that special fallacy of the compiler, *ignoratio contextus*. Facts are unwillingly divorced from their literary context, or, more fatal still, from their sociological context. Even Prof. Westermarck, we believe, who strives so hard to be critical in his use of his authorities, has occasionally included spurious, or at any rate wrongly labelled, specimens in his vast museum of anthropological materials. . . . Granted that the civilized man, considered in abstraction from his social inheritance—in a word, from his education—is the natural man or worse, does it follow that, when the results of the socializing process have been counted in, there will remain any fundamental similarity in respect to ethics as tried by the test of conduct? It was Darwin himself who said that the difference between savage and civilized man is the difference between a wild and a tame animal. Had he laid greater emphasis on the part played in the moral life by social tradition, Prof. Westermarck might, we think, have done more to bring this difference out."

In his review of Frazer's *Totemism and Exogamy* (*Athenæum*, June 11 and 18, 1910), Marett gives a similar caution:

"The time has come to work by regions. This is not to abandon the hope of discovering universal tendencies amid the bewildering variety of man's efforts after culture. It is simply to defer that hope until we are in a better position to appreciate each piece of evidence in relation to that organic context whence most of its significance is derived. . . . Some day . . . it is to be hoped, the rising generation of anthropologists, following the rule *divide et impera*, will produce a series of sociological monographs capable of serving as the basis of the sounder comparative studies of the future. . . . Totemism, by these two enthusiastic apostles of the world-wide method has been brought so near home that the fact that British dukes habitually abstain from eating strawberry leaves would, doubtless, sooner or later have been set down to a sacred tradition cherished in secret by families whose sense of ancestry is exceptionally strong.

"It is to be hoped in the interests of such relatively final justice as science must try to dispense, that, as anthropologists increase in numbers and intensive cultivation of their not unlimited field becomes a virtue born of necessity, this duty of filtering to which Dr Frazer did not feel equal (having several continents waiting for him after he finished with Australia) will be performed thoroughly and conscientiously, as befits researchers who are aware that gold may be found in grains as well as in nuggets. . . . We may be allowed to wonder—speculatively,

as it were, and without prejudice—whether the digest of information concerning this or that region touches attainable finality. Thus the totemism of a peculiarly interesting region, the North-West Coast [of America] is, as perhaps no where else, intimately bound up with the whole social system; so that it might be argued that no study short of a thoroughgoing sociological investigation of the institutions of this group of tribes could make the meaning of their totemic practices and beliefs intelligible in all their aspects."

"Now," as Marett well knows, "there are those champions of a sociological method who have accused British anthropologists in general of substituting unconsciously for that *formule d'ensemble* of the historian, which should correspond to some gradual development actually observable in the world of fact, a pseudo-historic and merely logical representation of how something corresponding to a concept, or even to a mere name, sprang spontaneously into being; which mode of origination, they allege, is regular in ætiological myth, but rare in nature." By what right the writer of the above should share that reputation I do not know, beyond the indisputable fact of his geographical position—weighed against which his comparative isolation as an original and critical thinker seems of no moment. Does the following sound Frazerian? (See *The Birth of Humility*, Oxford, 1910, p. 6.)

"No isolated fragment of custom or belief can be worth much for the purposes of Comparative Science. In order to be understood, it must first be viewed in the light of the whole culture, the whole corporate soul-life, of the particular ethnic group concerned. Hence the new way is to emphasize concrete differences, whereas the old way was to amass resemblances heedlessly abstracted from their social context. Which way is the better is a question that wellnigh answers itself."

If these extracts do not suffice to convince the reader of what he may look upon as the un-English attitude of the Oxford Reader in Social Anthropology, let him peruse still one more—or better yet, let him read the whole of the article entitled, "The Present State of Anthropology," which appeared in the *Athenæum* (Mar. 12, 1910), and from which the following is quoted. Nor am I aware of the writings of any American author in which these points have been better presented or in any respect more significantly stated. Marett says:

"On the part of the select few who have tried to master the subject thoroughly, there is an evident desire to introduce exacter methods at all costs. There is no need to seek far for the cause of this anti-popular movement. It lies in the disillusionment which is the inevitable sequence of that gay and irresponsible time during which a youthful science sows its wild oats. Once let it be realized

that it is equally necessary to take account of similarities and of differences when employing the comparative method, and a clean sweep has to be made of the greater part of the standard anthropological authorities, with their naïve scheme of a worldwide unilinear evolution. Intensive study is the demand of the new era. It is seen that, before profitable comparison can be instituted, the things compared must be severally known to the bottom. Each datum must be constructed in the light of what Dr Farnell has termed 'the adjacent anthropology,' namely, the whole context of culture to which it is organically related. Thus the rising generation of experts is content to forego entirely the delight of reconstituting, by means of the imaginative manipulation of snippets, the age of magic, the totemic stage of society, the epoch of the undivided commune, and similar wholesale phases of 'the great might-have-been.' Its interests are local and specific. A definite anthropological province such as Australia, or even a smaller area such as the North-West Coast of America, is nowadays held to provide scope enough for the energies of the most ardent 'comparativist'. In this way, it is hoped, there will in time be given to the world a number of departmental digests serving the double purpose of furnishing the theorist with well-tested material, and indicating to the field-worker what gaps in the evidence he should endeavour to fill. . . . They [Spencer and Gillen] have shown to what unplumbed depths the most unpromising types of savage culture do in fact reach down. Henceforth, to arrive, in Mr Dennett's telling phrase, at 'the back of the black man's mind,' must appear as a most formidable undertaking—one that calls as it were for a fully equipped anthropological 'Challenger.' To haul in a few bucketfuls of surface water has scientific values no longer. Once established then, this demand for deep-sea dredging is bound to create a supply."

By way of conclusion, I may say that in my experience the Englishman's ignorance of American methods is no more colossal and no more a matter of deprecation than our ignorance of *his* methods and theories. Upon my first appearance here I was very voluminously assured of the narrowness and time-honored insularity of the English, particularly as scientists. Perhaps they are narrow, but it has occurred to me—and the impression persists—that if Americans are broader, they are correspondingly thinner in content and more superficial. This, however, is merely exemplifying the very fault which I hoped to point out: our too ready characterization of a nation or a class and the ready generalizations from insufficient data, usually as false as they are facile. And, lest the purport of the above be misunderstood, let me say that though Dr Lowie's letter to *Science* has called this forth, I have no reason to believe that he is one of those who have made the false and facile deductions that we must all deplore.

In closing, I may be allowed to refer to Marett's *Anthropology*, a review of which will be found in *Current Anthropological Literature* of

January–March, 1912. Finally, as to national scientific methods I may be allowed to quote the following from the pages of a letter written me by an English ethnologist (though I do it without having asked permission), which I feel must express the sentiments of all concerned. In regard to this article and the question of 'American' and 'English' methods, he wrote:

"I think there is something in what Lowie says, only, of course, he exaggerates. Don't you exaggerate either! Let us keep mere partisanship out of anthropology, and rather take the wiser point of view, from which one sees that discussion and the clash of postulates all make for truth in the long run: and remember that Science is cosmopolitan—not English *or* American, but both and neither. The one thing to transcend is parochialism—which is not any the better, if it is a matter of hemispheres and continents."

W. D. WALLIS.

PHILADELPHIA, PA.

NOTES ON CERTAIN USAGES RELATING TO LINGUISTIC WORK

INTELLIGENT variations and innovations in use of terminology, alphabetic symbols, and punctuation should be permitted and encouraged by editors and publishers and all who have charge of the form in which linguistic material is presented. It is only by variation in usage that progress in these branches has been made in the past. Rigid uniformity in these matters has, in our present state of knowledge, nothing to commend it; it means death to progress. One quickly and easily becomes familiar with any terms or symbols used by any writer, provided that their value is explained, that they are employed because of scholarly reasoning, and that they are sanely conservative. It matters not at all if one finds *s*, *ʃ*, *c*, or *ш* employed in various records of various languages for the sound of English *sh*. The fittest of these characters will eventually survive. Any one of them should be allowed to stand unchanged, but not unchallenged, in published linguistic work. One should be allowed to have the abbreviation for doctor printed either Dr. or Dr, according to preference. At the same time much attention and discussion should be given to such usages.

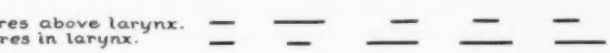
The relative merits of the practices discussed in the following brief notes ought to be thought out and tried out. We should then hold to those which are best.

1. It appears that most languages distinguish between what we may term roots and formal elements. If we call roots when compounded

with other roots, according to their position, adpounds, prepounds, impounds, and postpounds, just as we now speak of formal elements, according to their position, as affixes, prefixes, infixes, and postfixes, could not many awkward expressions, like "used as the first element of a compound," be avoided? The verbs would be adpound, prepound, inpound, postpound, corresponding to affix, prefix, infix, postfix. In order to make our terminology more regular, would it not be well generally to adopt "postfix" instead of "suffix"?

2. In ordinary work would it not be better to classify sounds in the production of which the tongue plays an important part according to the portion of the tongue that articulates rather than according to the region of the roof of the mouth at which the tongue articulates? Such sounds as t, d, s, n, Spanish ñ, etc., are made with the tip or blade or front part of the tongue, and might therefore be called frontal consonants. Sounds such as k, g, Roumanian ñ, etc., are made with the dorsal or back part of the tongue and might therefore be called dorsal consonants. We might then speak of labial, frontal, dorsal, and laryngeal sounds. "Frontal" and "dorsal" are more wieldy terms than "front-of-the-tongue" and "back-of-the-tongue." The term tergal is perhaps preferable to dorsal.

3. "Glottalized" seems to be a good term to apply to sounds produced with simultaneous closure of the glottis. If in the accompanying diagram we let the upper lines stand for closure above the larynx and the



lower lines signify the closure in the larynx, while the length of the lines indicates the duration of the closures, a number of different varieties of glottalized stops for which we have as yet no current terminology may be illustrated. A consonant merely followed by a glottal stop should not be called a glottalized consonant.

4. Consonants such as occur in Spanish *abogado* might be called lēvis. This Latin word could be used both as noun and adjective in English.

5. Instead of using "voiced" and "voiceless" to denote the presence or absence of vibration of the vocal chords in the production of sounds, might it not be better to use the terms sonant (Latin *sōnāre*, to make a musical or other sound; Sanskrit *svanati*, Anglo-Saxon *swinsian*, of the same meaning) and surd (Latin *surdus*, deaf; dark, said of color; vague, unknown)? Sonant and surd are perhaps the best Latin words which could be found for these meanings, are at present used as widely as

"voiced" and "voiceless," and have the advantages of forming the nouns sonancy and surdness or surdity and of being readily taken into any language. Such words as voicedness and voicelessness are awkward.

6. Orinásal (Latin *ōs*, mouth; *nāsus*, nose) is well applied to vowels produced with both mouth and nose passages open. The term naso-oral is less euphonious. In a phonetic key orinasal vowels should for obvious reasons be listed before oral vowels.

7. In Latin *palātus* or *palātum* refers loosely to the whole roof of the mouth, but especially to what we now call the velum or uvula. English "palate" is still used in ordinary language with much the same meaning as Latin *palātus* or *palātum*. But in scientific language there is a tendency to apply palate to the hard palate only, while velum (modern Latin *vēlum palāti*, sail of the roof of the mouth) is used to signify the soft palate in the rear of the hard palate. We need three terms, each of which is a single word only—one for the entire roof of the mouth, one for the hard palate, and one for the soft palate. As it is, we have only the two terms, palate and velum, however we apply these terms. We suggest that palate be used, as was the Latin word from which it is derived, to designate the entire roof of the mouth; for the soft palate the term velum, Latin *vēlum palātī*, might well be retained. For the hard palate a new term should be found. Latin *corōna palātī* (Latin *corōna*, from Greek κορώνη, ring, wreath, rim, anything bent), English coróna, might be applied to the hard palate for want of a better term. Latin *gingīva*, gums, would hardly do as a designation for the hard palate since it would probably not readily become anglicized, though we might attempt to adopt its French form *gencive*. The adjectival forms would then be pálatal, córonal, and vēlar, from which verbs pálatalize, córonalize, and vēlarize might be formed. A term better than *corona* could probably be found without difficulty.

8. This would leave us free to use the term palatalize in a more proper sense than it is now employed, namely, as indicating a certain kind of articulation and release.[1] It is possible to articulate a palatal consonant back of the "palate" if we use that term as it is now being used, while most of the sounds articulated against the "palate" are not palatals. According to the terminology here suggested, Paiute contains both palatalized frontal consonants such as n^y and palatalized dorsal consonants such as η^y. Jespersen's distinction between palatal and palatalized sounds will not be discussed here.

9. The term marginal (Latin *mārgo*, border, rim, edge) might be

[1] Cf. R. Lenz, *Zur Physiol. u. Gesch. d. Palatalen*, *Diss.*, Bonn, 1887.

used for sounds articulated against the rear margin of the velum or soft palate. At present some writers apply velar to these articulations, while others apply uvular, reserving velar for such articulations as those of ordinary *k* and *g*, that is, for articulations made against the velum. If the soft palate is called the velum, then all articulations against it are velar. Articulations against the posterior rim of the soft palate would better be called marginal than uvular, since they have more to do with the *margo* or rim than with the uvula. The term marginal has been applied by some to l-sounds instead of the commoner term lateral, but for l-sounds lateral (Latin *latus*, side) seems preferable to marginal. It need not worry us that it is possible to articulate l-sounds with neither front nor sides of the tongue touching the roof of the mouth.

10. Instead of stops, explosives or plosives, is not clusives (from Latin *clausus* or *clūsus*, closed) a better term? Some of the explosives do not explode. The term clusils has been proposed by Kewitsch and others. It is readily taken into any language, or may be translated in English by stop, in German by Sperrer or Verschlusslaut, in French by arrête. I prefer clusives to "clusils." Closure is a shorter term than occlusion.

11. For such sounds as English *v*, *s*, German *ch*, the term fricative (Latin *fricātus*, rubbed) seems best. Constrictive has little to recommend it. Spirant (Latin *spīrāre*, to breathe) is very misleading for the following reason: A consonantal diphthong composed of a stop plus a fricative is called an affricative and not an aspirate. If spirant is used instead of fricative, one expects aspirate instead of affricative, but aspirate is applied almost universally to stops followed by a flātus or period of surd breath and not to affricatives. The *Handbook of American Indian Languages* uses spirant instead of fricative with the exception of Mr Thalbitzer's article, although the terms affricative and aspirate are used throughout as above defined. In Dr Dixon's article therein contained "spirant" is applied to fricatives such as s, and inspirant to a variety of stops written B, D. Most of the recent books on phonetics have pointed out the advisability of using "fricative" instead of "spirant". The chief reason is, as said before, that aspirate and affricative have a settled, definite usage.

12. It has been practically settled by phoneticians that the best order in which the sounds of the language can be presented is: first the vowels, then the semi-vowels, then the consonants, beginning with the most posterior consonants and ending with lip consonants. Yet in phonetic keys of American languages almost every author presents the sounds in a different order.

13. Certain French phoneticians have proposed that *phonême* (from Greek φώνημα) be used instead of the ambiguous or cumbersome "sound," "individual sound," "phonetic element," etc., of various writers. In English could not phónem (phónem < φώνημα : : sýstem < σύστημα) be adopted, or if this proves impracticable, *phone* (Greek φωνή) or *sone* (Latin *sonus*) be used for rendering "phonetic element"?

14. A syllable that has louder stress than other syllables is commonly indicated by placing the acute accent either before that syllable, or after, or over the vowel of that syllable. This multiplicity of practices is somewhat confusing. For instance, *ka'do* may mean either that the first or last syllable is the louder. It is especially confusing when the acute accent is placed after a diphthong and it is not indicated whether the diphthong be what Sweet terms ascending or descending or whether each of the elements is as prominent as the other or others. Thus *kai'do* might have five different interpretations. Although a number of the foremost phoneticians practise placing the acute accent before the loud syllable, this sprawls the word, forces one to divide it into syllables, and for some reason is hard to get used to. It seems most natural and it is certainly most legible if the acute accent is placed over the vowel of the loud syllable, even though the latter practice requires that the printer deal with a greater number of characters than otherwise. That the acute accent placed over vowels indicates length or a variety of *umlaut* in some languages need not bother us. Perhaps the best usage to which the easily written grave accent can be put, is that it be placed over the non-dominant vowel or vowels of diphthongs. Thus phonetically we might write German *Hain* = *haìn;* Spanish *bueno* = *bùeno;* Russian dialectic комната = *kòɔmnata;* Spanish *buey* = *bùeì;* the word meaning arrow in the Taos Indian language would be *łùà*. At present there is no good method in use for symbolizing diphthongs as distinct from juxtaposed vowels. The grave accent might also be placed over the non-dominant consonant of a consonantal diphthong. Thus Russian отсѣ̀ъ = *atsʲèe̯;* Russian очѣ̀ъ = *atʃʲèe̯*.

15. Should the English meanings of foreign words be enclosed in single or double quotation marks or in single or double marks shaped like inequality signs, which are used for enclosing quotations to a large extent in French and Russian? Meanings are not quoted in the same sense that one quotes the speech or written words of an individual. Might it not be well to enclose meanings by special signs differing from the current single and double quotation marks?

16. Should comma, semicolon, colon, and the like precede or follow

the single or double right-hand quotation mark? The best modern books on grammar and linguistics that have been published in German or Russian in recent years have, for instance, *ku*, 'not'. In this country we are usually forced to use *ku*, 'not.' The latter punctuation is illogical and should go out of use, at least in linguistic work.

17. In writing and printing long *umlauted* "a" the macron is commonly placed under and not above the dieresis. This is illogical. We are representing a long *umlauted* "a", that is a long open e-sound, not an *umlauted* long "a".

18. Recently the abbreviations Mr., Mrs., Dr., and St. have been written and printed by some, especially by leading English publishers, with the period omitted. These are true abbreviations, and it is the simple old rule that abbreviations are distinguished from non-abbreviations by having a period placed after them. What is the advantage of complicating matters and making a few exceptions to the rule? Mr, Mrs, Dr, and St written without the period are very offensive to many people. Still worse than omitting the period seems the recent practice of writing these words out in full. See Handbook of American Indian Languages, p. 739. That M^{r}, M^{rs}, D^{r}, and S^{t}, with or without a period under the ^{r}, ^{s}, or ^{t}, are also written by some, has to my mind nothing to do with the question under discussion.

J. P. HARRINGTON

SCHOOL OF AMERICAN ARCHÆOLOGY
SANTA FÉ, NEW MEXICO

ANTHROPOLOGIC MISCELLANEA

International School of American Archæology and Ethnology in Mexico.—For the year 1911–12 Professor Franz Boas, of Columbia University in the City of New York, is in charge of the School. Fellows have been appointed as follows: Dr Alden J. Mason by the University of Pennsylvania, Mr William H. Mechling by the Hispanic Society of America, Mr Manuel Gamio and Miss Isabel Ramírez Castañeda by the Mexican Government. Dr Werner von Hörschelmann, fellow of the Prussian Government, left Mexico late in November to take charge of a position to which he was appointed in the Royal Ethnographical Museum at Berlin. The work of the School during the present year is directed particularly toward two problems: the affinities and subdivisions of the Mexican language, and the investigations of the development of cultural types in the valley of Mexico. In preparation of part of the former work Mr Mechling has prepared a detailed map of the distribution of languages in the State of Oaxaca, based on the manuscript vocabularies collected in 1888 by Dr Antonio Peñafiel, which the latter generously placed at the disposal of the School. Based on this work it was possible to locate two apparently strongly divergent dialects of Mexican in the State of Oaxaca, one in Tuxtepec on the Rio Papaloapam and one in Pochutla near Puerto Angel. Further inquiry furnished corroborative evidence, and Mr Mechling was intrusted with the investigation of the dialect of Tuxtepec and its relations to neighboring Mexican dialects. In a population of about 7,000, nearly one hundred individuals are found who still use this dialect, more or less, and it is hoped that enough may be gathered, notwithstanding a strong infusion of Spanish words, to determine its characteristics.

Dr Mason has been intrusted with an investigation of the dialect of the Tepecano of northern Jalisco, which proves to be closely akin to Pima. The journey to the Tepecano was undertaken from Guadalajara. Professor Boas, who took part in the trip, separated from Dr Mason at San Juan de Teul, where he stayed to find, if possible, traces of the old language of the Teules. Five individuals were found who remembered a small number of words and phrases, almost all of which proved to be Mexican. However, in the vocabulary a few words were found related to Tepecano, so that perhaps the old statement of the Franciscan friars

who claimed that the Teules spoke Tepecano, which was, however, in process of being superseded by the Mexican, may be considered as corroborated.

Linguistic work is also carried on by Miss Ramírez, who is collecting modern texts and rituals from some of the villages of the valley of Mexico.

Search among the ruins of the Cerro de Teul revealed many broken pieces of pottery of a type akin to Tarascan earthenware, but also some special forms, the most remarkable of which is a rectangular, slate-like object, covered on one side, except a narrow frame, with hachure designs, evidently made with a comb-like instrument. In the overhanging cliffs of the mesa, burials were found, with skeletons with deformed skulls. Entire skeletons were in a recumbent position with knees drawn up to the chin and arms folded over the chest. Mixed in were found many loose bones which suggest the use of the same place for repeated burials. No traces of outer walls were found; nevertheless the evidence of charcoal at various depths and numerous other remains suggest the use of these recesses as dwellings, which were probably protected by a lean-to of straw or matting, such as may still be seen in use in the caves and cliff recesses of this region. Quite a number of such recesses are inhabited in the same manner in the region of Mezquital del Oro, Zacatecas.

In the latter place a burial site was discovered on a low mesa which yielded pottery of Tarascan type. It may therefore be said that this type prevailed over the whole district, as far north as Zacatecas.

In the valley of Mezquital del Oro remains are very sparse, but on a few of the high mesas, which are difficult of access, ruins of villages were found. Professor Boas examined particularly the Mesa de los Antiguos, on which many structures were found, apparently similar in type to those of Teul and of the Bolaños region as described by Dr Hrdlička.

The gold mine of Mezquital del Oro yields many stone hammers that were used with two hands and indicate an early exploitation of the mine, although presumably belonging to the Spanish period.

In the valley of Mexico, Mr Gamio undertook a careful investigation of a small area near Azcapotzalco, a district to which Mr W. Niven first drew attention. From here were obtained many pieces of pottery and human remains, partly of the type of the valley of Mexico, partly of the special type of San Juan Teotihuacan, partly of other types not yet identified. The excavations, so far as they have been carried on, show that the valley type occurs only in superficial mounds. Under these lies a layer of decomposed tufa which contains some pottery of the

Teotihuacan type. Under these follow river gravels and sands, and then a very thick subaerial deposit in which, just under the river gravels, adobe and stone walls may be observed. Among these occur a great number of heads of the Teotihuacan type, and pottery of similar type. The stratum is about twenty-five feet thick, and it remains to be seen whether other types will be found farther down. The Teotihuacan types seem to occur in very excellent technique and very roughly made in the same layers.

Some Notable Works on South American Archeology.—Archeology is fortunate in its attraction for men, who, from choice or force of circumstances, have worked out important problems alone or through private initiative. To such sources we owe some of the most notable recent publications on the archeology of South America.

In *The Incas of Peru*[1] (E. P. Dutton and Co., New York) Sir Clements R. Markham gives some of the choicest fruits of more than fifty years' study and travel in which he has endeavored to master all the original authorities on Inca history and civilization. The result is a series of essays of absorbing interest to the general reader and at the same time indispensable to the serious historical student. Among sources recently brought to light he mentions *Nueva Coronica y Buen Gobierno*, by Don Felipe Huaman Poma de Ayala. This quarto of 1179 pages was found in the Royal Library at Copenhagen by Dr Pietschmann, who will soon publish what Sir Clements calls "the most remarkable as well as the most interesting production of native genius that has come down to our time."

A short chapter is devoted to the megalithic age; the famous monolithic sculptured doorway at Tiahuanacu, the cyclopean building in the Calle del Triunfo in Cuzco, and the stone of Chavin de Huantar, attract the author's attention but do not detain him long. He believes in the great antiquity of the megalithic civilization which probably held sway over the Andean regions from an unknown distance south of Tucuman to Chachapoyas, with Tiahuanacu as the center. The author is not accurate in his description of the sculptured figures on the Puerta del Sol, Tiahuanacu, a portion of which is reproduced in figure 19. He discusses in turn the rise of the Incas, their empire, religion, calendar, festivals, language and literature, condition of the people, the coast valleys, the Chimu, the Chincha confederacy, and finally the cataclysm. The list of kings given in the Appendix is from Montesinos, who it seems obtained

[1] For a fuller review, by Dr W. C. Farabee, see *American Anthropologist*, n. s., vol. 13, no. 3, July–Sept., 1911.

his information from Blas Valera without giving the latter credit. The Appendix also includes extensive notes on the names Quichua and Aymara, architecture and arts of the Incas, the Inca drama of Ollantay, and Inca folklore.

While much attention has been paid to Peru on the south and Mexico and Central America on the north, the field between has until recently

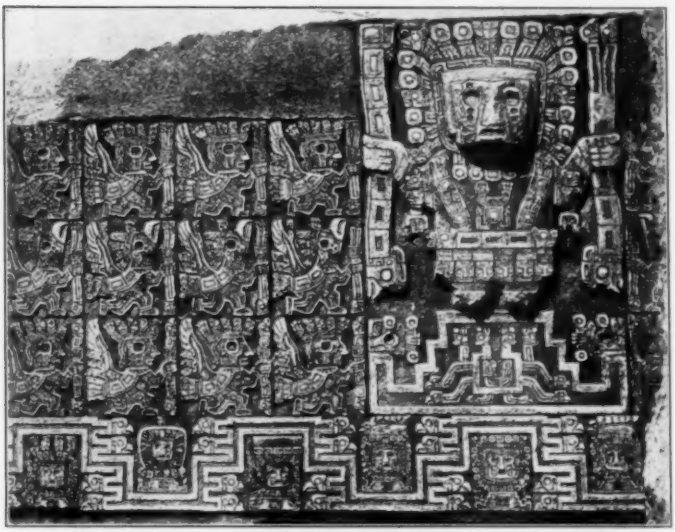


FIG. 19.—Portion of the sculptured figures on the Puerto del Sol, Tiahuanacu, Peru, worked up by Miss Adela C. Breton from a photograph in the Bolivian Government's Album.

received scant notice. Thanks to Mr George G. Heye, who financed the expeditions, and to Prof. Marshall H. Saville, who directed them, the archeological world now has two splendid volumes by Professor Saville: *Contributions to South American Archeology, Antiquities of Manabi, Ecuador* (Irving Press, N. Y.), the second volume appearing in 1910. Professor Saville distinguishes nine centers of ancient culture, five in Ecuador and four in Colombia, these of course in addition to the intrusive Inca culture. The two volumes,[1] as the title indicates, are confined to

[1] The first volume was reviewed for this journal (X, 122, 1908) by Prof. W. H. Holmes, who also reproduced some of the more important illustrations.

one Ecuadorean province. In Manabi, an arid region extending from the equator to Guayaquil, the author finds a civilization but little affected by Incasic influence. Stone seats form a special feature of Manabian archeology. They are found in great numbers, but only on Cerro de Hojas and several neighboring hills within an area not more than twenty miles in diameter. So far as Cerro de Hojas is concerned the seats were found only in the rooms of the ruined houses or *corrales*. The author enumerates about a dozen types of stone seats: he believes them to have been ceremonial. Of perhaps even greater significance are the stone bas-reliefs found principally on Cerro Jaboncillo and likewise in the corrales. The author divides these sculptured slabs into nine groups. The first five groups represent human female figures; in the sixth and seventh the sex is doubtful; the eighth is a complex problematic stylistic life form; and the ninth is purely diagrammatic. Under ceramics considerable space is given to figurines, human heads, whistles, and spindle whorls. The latter are decorated with incised patterns but do not compare in workmanship with the finer whorls from Colombia and the valley of Mexico. Although hunting for golden treasure was not the object of the expedition, the author admits being disappointed in the number and value of metal objects found. Each volume has an Appendix with long extracts from early Spanish authors, which with the comprehensive bibliography in the first volume brings the reader into close touch with the anthropology of Ecuador.

GEORGE GRANT MACCURDY.

Dr Paul Topinard, the noted French anthropologist, died at Paris on December 20, 1911. Topinard was born at l'Isle-Adam (Seine-et-Oise), November 4, 1830, and began his studies at the Collège Ste-Barbe in Paris, but soon was compelled to interrupt them to accompany his father to the state of New York, where the latter had extensive estates, near which, at Delhi, young Topinard was sent to school. Later he went to Philadelphia, where his time was divided between the public schools and the Augustins, and returning to New York he entered a commercial school, remaining two years. But business pursuits were not to Topinard's liking. He returned to Paris in 1848; in 1853 he was an interne of the hospitals of Paris, and became a doctor of medicine in 1860. Through the influence of Paul Broca, Topinard relinquished his practice and on the creation of the anthropological laboratory at the École des Hautes-Études, was appointed adjunct director. When the *Revue d'Anthropologie* was founded by Broca in 1872, Topinard became his collaborator, and on

the opening of the École d'Anthropologie in 1876, under Broca's direction, Topinard was appointed professor, with Bertillon, Hovelacque, Mortillet, and others, thus becoming one of the advance guard who created and continued that scientific and philosophic movement which arose with the founding of the Société d'Anthropologie. In the same year, Topinard's book, *L'Anthropologie*, appeared, and met with such remarkable success that it passed through many editions and was translated into several languages. On Broca's death in 1880, Topinard was unanimously elected general secretary of the Société d'Anthropologie. His writings on the subject of anthropology alone are too numerous to mention here, but attention should be directed to his masterpiece, *Traité d'Anthropologie*, published in 1885, his *Éléments d'Anthropologie générale*, and *L'Homme dans la Nature*. Topinard was a zealous student of all branches of anthropology, and endeared himself to his fellows by his amiability and his generosity in parting with his store of knowledge gathered during many active years.

PAUL TOPINARD—1830–1911

Augustus Henry Keane.—The following notice of the life and work of Dr A. H. Keane of London, by Sir Edward Brabrook, is extracted

from *Man* for April, 1912. Dr Keane was born in Cork, June 1, 1833, and died February 3, 1912.

"The science of ethnology has lost a devoted student by the death of Dr Keane. For it he made great sacrifices in early life, to it he devoted high intellectual qualities, a rare linguistic faculty, and untiring industry. He began to take part in the meetings of the Anthropological Institute in 1879, in which year he contributed a monograph on the relations of the Indo-Chinese and inter-Oceanic races and languages, and discussed a paper on a similar subject by Colonel Yule. He was an eloquent speaker, and joined in our discussions with much effect. At the anniversary meeting in January 1880 he was elected a member of the council. In 1883 he prepared at the invitation of that body and read to a special meeting of the Institute a paper on the Botocudos, two males and three females of that people being present. In the same year he was appointed Professor of Hindustani at University College. In 1884 he read to the Institute a paper on the ethnology of the Egyptian Sudan, and in 1885 one on the Lapps, a group of whom were exhibited on the occasion. At the anniversary in January 1886 he was elected a vice-president of the Institute, a distinction which he highly valued, though the vice-presidents were not frequently called upon for their services while Sir Francis Galton was president. Professor Keane's term of office expired at the anniversary of January 1890. After that time he frequently contributed to the journal of the Institute and to *Man* critical reviews of new anthropological works. In 1896 the second edition of his standard treatise on ethnology was issued from the Cambridge University Press. In it he discussed separately the fundamental ethnical problems and the primary ethnical groups. Under the first head were included the physical and mental evolution of man, the antiquity of man, and the specific unity and varietal diversity of man. Under the second head he laid down a division of man into four primary groups, which he designated Homo Æthiopicus, Mongolicus, Americanus, and Caucasicus. This was followed in 1899 by *Man, Past and Present*, in which the origin and interrelation of those groups are discussed in further detail. In 1900 he published a timely and enlightening work on *The Boer States: Land and People*. His contributions to encyclopedias and guides and other geographical works are too numerous to mention. His eminent services to science and literature procured for him the corresponding membership of the Anthropological Societies of Italy and of Washington, the degree of LL.D., and the grant [in 1897] of a pension on the civil list."

The So-called "Moors" of Delaware.—The *Museum Journal* of the University of Pennsylvania notes that Dr Speck and Mr Wallis of the University have been conducting investigations among the so-called "Moors" of Indian river, Sussex county, Delaware, during which they have collected a body of information capable of being developed into an instructive record of a community made up of the amalgamation of three distinct races—white Europeans, African Negroes, and Nanticoke Indians. The proportion in which these three enter into the mixture cannot be determined with accuracy.

The descendants form today an exclusive community of about 700 souls on Indian river with a smaller community of about 300 at Cheswold, Kent county, Delaware. Each community maintains a strong consciousness that preserves its identity and keeps the families of which it is composed from intermarrying with either the whites or the negroes. Physically, the members of these communities are very well formed, their mental qualities are good, and they are well-to-do.

To what extent the exclusiveness of these communities is due to Indian ancestry it is impossible to say, but Dr Speck thinks that this feeling may be due to a dominating Indian tradition. They possess an abundance of folklore and superstitions, but whether these will be found to present characteristics which will associate them with either the Indian or the Negro it is not now possible to say. Magic and witchcraft are extensively practised and a belief in the specific medical virtues of various plants forms a body of local information that makes a suitable subject for further study.

Such a community as that on Indian river obviously offers interesting material for the study of one of the far-reaching aspects of modern anthropological research, namely the effects produced by race amalgamation. Here we have an example of a community which derives its origin from three races, and which is completely self-sustained, which rests its claim to exclusiveness on a feeling of social superiority, and which presents all the essential marks of a separate ethnic and social group.

The study of this community has its bearing on such fundamental human phenomena as physical variation, tribal prerogative, clan consciousness, race sensibility, and the sociological significance of exclusive property in folklore and belief.

Dr Speck finds that the esoteric tendency which has set up barriers to protect the group against the action of outside influence is not inconsistent with a breadth of view which provides schools of a high standard and a liberal provision for the education of the youth. The moral tone

of the community is approved by all observers and the general discipline is clearly of a high order.

Marking the Oregon Trail.—The legislature of Nebraska has made appropriation for the marking of that part of the old Oregon Trail within the limits of the state, and the work will be commenced early in this year under the auspices of the Oregon Trail Memorial Commission, representing jointly the state authority, the Nebraska Daughters of the American Revolution, and the Nebraska State Historical Society. The active officers are Mr Robert Harvey, state surveyor; Mrs Lottie Gove Norton, state regent Daughters of the American Revolution; and Mr Clarence S. Paine, secretary of the State Historical Society. The local railroads have volunteered to assist in the work.

The Oregon Trail, beginning first at Independence, and later from Westport (Kansas City), Mo., went up the North Platte, across the Rocky mountains, and down Snake river, and constituted the principal highway to the Columbia region, as the Santa Fé Trail was the road to New Mexico, from about 1830 down to the era of the Union Pacific railroad. It gave title to one of Parkman's most famous works.

It is to be regretted that the Commission has selected the name and effigy of Marcus Whitman for representation on its official badge, thus tending to bolster up an exploded myth. Whitman's part in the Oregon controversy is ignored by Bancroft, and denied by Chittenden and other critical historians, while the fictitious character of the story was thoroughly demonstrated by Professor Bourne of Yale University more than ten years ago. It is not even proven that Whitman was ever in the City of Washington, and the famous ride around which the story centers was made over the Santa Fé Trail. Wyeth, Sublette, Jason Lee, Frémont, DeSmet, Carson, Parkman, Bridger, any one of these would have been a more appropriate selection, about whose connection with the Oregon Trail there is no question.

JAMES MOONEY.

All-Slav Congress.—The first All-Slav Congress and Exposition of Social Medicine and Hygiene will be held in St Petersburg during the week commencing May 28, 1912.[1] There will be five sections, the first of which, under the presidency of V. O. Gubert, will deal with medicine and hygiene of the masses; the second (J. F. Zemackij, president) with

[1] As this journal goes to press, it is learned that the Congress, which promises to be of unusual importance, is postponed until 1913 in order to enable a more thorough participation of some of the Slavs outside of Russia.

gymnastics and exercises tending toward the better development of the body; the third (president, M. M. Kovalevskij), with social ethics; the fourth (president, A. V. Vasiljev), with the development and health of children; and the fifth (president, D. O. Ott), with women.

In detail, Section 1 will deal with the regulation of medical aid; hygiene of houses and cities; housing problems; nourishment, with prices of food; social and hygienic protection of workingmen; control of prevalent diseases; protection of the mental health of the population, medical education and activities; and cure establishments, springs, etc., with balneotherapy.

Section 2 comprises physical exercises; the Sokols (the great Slav gymnastic organization); athletic contests and sports; "touristics"; and bathing, with swimming.

Section 3 deals with alcoholic abuses; dissipation and specific diseases; suicide; and crime.

Section 4 extends to development of the child; health in infancy; infant mortality; training of the child before school age; school hygiene; and mental development of the child.

Section 5 includes everything relating to the functions and health of women.

The Linden Museum at Stuttgart.—Thanks to the untiring efforts of the late Count Karl von Linden, the city of Stuttgart, Germany, has a geographical and ethnological museum which is remarkable for the extent and character of its collections. Originally intended as a museum of a rather commercial character, to acquaint Germans with the customs and products of foreign countries, the institution has broadened considerably and become more scientific in character. Von Linden recognized that the time was not far distant when most of the savage peoples of the world would cease to follow the ways of their ancestors, and that, under the influence of civilization many an old art and handicraft would be forever lost. Thanks to his personal efforts, he rapidly collected a large number of costumes, carvings, weapons, of savage workmanship, and a vast amount of other exceedingly valuable ethnographic material. So rapidly did this collection grow that in 1910 it was necessary to erect a special building in Stuttgart, which in dimensions and beauty of architecture compares favorably with the largest museums of the kind in the world. The new museum was officially opened on May 28, 1911. Unfortunately, von Linden did not live to witness that event. He died January 15, 1910. In the von Linden collections will be found specimens

from every country in the world. For the purpose of completing the imperfect collections, the museum is prepared to exchange its duplicates for objects which it does not already possess. Thus, while the American Indian of the Far West is well represented, the museum feels the need of specimens from northwestern Canada, Mexico, Central America, and South America. Collectors and museum directors who desire to enter into exchange relations with the Linden Museum may address the director of the Museum für Länder- u. Völkerkunde (Linden Museum), Stuttgart, Germany.

Brotherhood of North American Indians.—A bill to incorporate the Brotherhood of North American Indians was introduced in the United States Senate on February 8. The purposes and objects of the corporation shall be "to teach, obtain, and maintain rights, liberties, and justice for all Indians equal to that of any people and inferior to none; to preserve and perpetuate the ancient traditions, arts, and customs of North American Indians; to unify their efforts and interests; to counsel together; to promote and encourage industry and thrift among Indian people; to collect, secure the preservation of, and to publish the records, papers, documents, and traditions of historical value and importance to North American Indians; to mark, by appropriate monuments, places historic and sacred to the American Indian; to impress upon present and future generations of American Indians the importance of united action for the common good; to promote a feeling of friendship, brotherhood, and good citizenship among its members; and to provide for the aged and infirm of the Indian race." The bill provides that the principal office of the Brotherhood shall be in the District of Columbia; that its membership shall consist of two classes, namely, "persons of Indian blood, and honorary members whose qualifications, rights, and obligations shall be prescribed by the constitution and by-laws." The officers are to consist of a "great sachem, as many great chiefs as there are local brotherhoods, great secretary, great assistant secretary, great treasurer, great assistant treasurer, chief registrar, chief assistant registrar, chief chancellor, chief historian, chief chaplain, board of managers, and executive committee." The incorporators belong to the Cayuse, Cherokee, Chippewa, Chickasaw, Choctaw, Cree, Delaware, Flathead, Kootenai, Nez Percé, Paloos, Oneida, Oto, Pend d'Oreille, Quapaw, Quinaielt, Sioux, Umatilla, Wallawalla, and Yakima tribes.

Museums of the Brooklyn Institute.—In the report of the Museums of the Brooklyn Institute of Arts and Sciences for the year 1910, recently

published, Mr Stewart Culin, Curator, reports as follows on the operations of the department of ethnology:

"The work of the Department has been practically confined to the reconstruction, decoration, and installation of the Japanese Hall. This has been done with the idea of supplying an appropriate and agreeable background for the collections, and suggesting, at least, the atmosphere of Japan. The Curator has had the valued assistance of a Japanese artist, Mr Genjiro Kataoka, who has criticized the details of the arrangement and color scheme, for which he is chiefly responsible. The two halves of the hall are devoted respectively to civil and military costume. The collections comprise the objects purchased by the Curator in Japan in 1909 with funds contributed by Mr Thomas T. Barr, Mr E. LeGrand Beers, Mr Carll H. DeSilver, Mr Herman Stutzer, and Col. Robert B. Woodward, and an appropriation from the Museum Collection Fund of that year. In addition, there are displayed earlier gifts made by Mr George C. Brackett, Mr DeSilver, and Col. Woodward. Series of objects of several different kinds have been presented by individuals: the arms and armor by Col. Woodward, the costumes by Mr Brackett, the musical instruments by Mr DeSilver, games, religious and ceremonial objects, and illustrations of the graphic arts by Mr Herman Stutzer, and a very interesting collection of objects of metal, stone, and glass from the ancient dolmens by Mr Thomas T. Barr. These gifts have been supplemented with several important loans: a Buddhist household shrine from Mrs T. H. Newberry, and collections of dolls for the girls' festival from Mrs E. LeGrand Beers and Mr Benjamin Smith Lyman."

International Congresses.—The following appointments of delegates to the various international congresses which are to meet in Europe during the present summer have been announced:

Eighteenth International Congress of Americanists, London (May 27–June 1): *By the United States Government and the Smithsonian Institution:* Rev. Charles W. Currier, Miss Alice C. Fletcher, Dr G. B. Gordon, Dr Edgar L. Hewett, Dr A. Hrdlička, Prof. G. G. MacCurdy, Dr Charles Peabody, and Prof. M. H. Saville. *By the American Anthropological Association:* Dr G. G. MacCurdy. *By the Anthropological Society of Washington:* Miss Alice C. Fletcher and Dr A. Hrdlička. *By the American Philosophical Society:* Dr Franz Boas. *By Yale University:* Prof. George G. MacCurdy.

Third International Archeological Congress, Rome (Oct. 9–16): *By the Smithsonian Institution:* A. L. Frothingham.

Fourteenth International Congress of Prehistoric Anthropology and

Archeology, Geneva (first week in September): *By the United States Government and the Smithsonian Institution:* Dr A. Hrdlička, Prof. George G. MacCurdy, Dr Charles Peabody. *By the American Anthropological Association:* Prof. George G. MacCurdy. *By Yale University:* Prof. George Grant MacCurdy.

Peruvian Antiquities.—As a result of the resolution adopted by the board of managers of the Anthropological Society of Washington on March 23, 1911 (see *American Anthropologist*, April–June, 1911, page 317), copies of which were widely circulated in Peru, the President of that country, on August 11 last, issued a proclamation of which the following is a translation:

The President of the Republic, considering that in order to safeguard the national interests it is necessary to modify the Supreme Decree of the 27th of April, 1893, concerning the gathering and study of Peruvian antiquities, orders as follows:

First. Paragraph second of Article Six of the regulations here mentioned is modified in the following manner: All the remains of the Peruvian aborigines belong to the State, which may concede duplicates of the same to those who ask for the privilege, provided always that such parties be well established scientific corporations. Regarding unique objects, permission can be given only to photograph the same. Casts will be permitted only in those cases in which there is no danger of any damage to the specimens.

Second. In every instance in which permission for excavations or studies is given, there will be named a supervisor ("interventor") who will represent the Government and will superintend the work.

Third. The objects secured will be forwarded by the prefects of the departments to the Museum of National History in this capital [Lima].

Fourth. Before the Congress decides upon a law relating to the conservation of antiquities, there is prohibited absolutely all exportation of the same, whatever may be their class and condition, except in the case of duplicates, as before mentioned.

Those who transgress these regulations will lose all the antiquities which they may endeavor to export, and in addition will suffer a fine of from twenty to two hundred Peruvian pounds in gold, to be imposed by the customs houses of the Republic, which are especially charged with the execution of this duty.

A. B. Legía—Antonio Flores.

Excavations at Meroë.—The Liverpool excavations at Meroë, under the direction of Professor Garstang, assisted by Mr Schliephack, are

making great progress. The palace of the Ethiopian kings, near the temple of Amon, proves to contain more than forty chambers and a large court. On the foundation-walls are reliefs of the usual Ethiopian pattern. Three hundred Sudani natives are now employed, with a staff of trained Egyptian diggers, chiefly fellâḥîn from Ḳuft. A light man-tramway, of the kind commonly utilized in excavations elsewhere (e. g., at Abusir and Deir el-Bahari) to facilitate the removal of the excavated material, has been installed, and to this Professor Garstang has added a small aërial cableway. A telegram from Khartûm describing the progress of the work appeared in *The Times* of January 17; from this the above account is partly taken.— *Nature*, London, January 25.

The Spanish Archives.—The following item of interest to students of the early history of the American Indians appears in *The American Historical Review* for January, 1912: "A visit made by the King of Spain last spring to the Archives of the Indies at Seville has resulted in royal orders for concentrating in that repository all documents relating to the history of the former Spanish dominions beyond the seas, which are now to be found in other archival centres, especially Simancas and Madrid. Adequate space will be made by vacating the lower floor of the Casa Lonja, hitherto used for other purposes, and giving over the whole building to the archives. It is expected that the establishment at Seville of a School for American historical studies will follow. Señor Pedro Torres Lanzas, director of the Archives of the Indies, has recently been promoted to the grade of First Inspector of the archival force of Spain."

Chito Hajo, otherwise known as Crazy Snake, died about April 1st near Boley, Oklahoma, and is reported to have been buried at sunset near the scene of his death in Okfuskee county according to the rites of the primitive members of the Creek Nation. Crazy Snake became prominent at the time of the so-called "smoked meat" rebellion in 1909 by the Snake faction of the Creeks at old Hickory Ground near Henryetta, when he was wounded and his house burned by deputy sheriffs. The old chief escaped to the hills in the Osage country, where he remained in hiding for some time, when he went to Okfuskee county and lived with Charley Coker, a member of the Snake faction. Crazy Snake was a strong advocate of the primitive life, and his death may be regarded as a factor in welding the conservative and progressive elements of the Creeks.

"Current Anthropological Literature."—Pursuant to the action taken by the councils of the American Anthropological Association and the American Folk-Lore Society at the Washington meeting in December

last, a new quarterly journal, to be known as *Current Anthropological Literature*, is to be published under the auspices of the two organizations during 1912, and all book reviews, as well as Dr Chamberlain's reviews of the periodical anthropological literature of the world, will henceforth appear therein instead of in the *American Anthropologist* and *Journal of American Folk-Lore*. The official authorization for the publication of the new quarterly is given on page 150 of this number of the *American Anthropologist*.

Archeology and Art.—The Peabody Museum of Harvard University has installed in the Museum of Fine Arts at Boston a temporary exhibition consisting of a selection from its large collection of objects from Central America. Among the objects in the exhibit perhaps the most striking are the stone sculptures from Copan, including the great seated female figure from the monumental stairway decorated with lines of hieroglyphs; a stone head showing perhaps the very best work "in the round" of the Maya sculptor; a lintel from Piedras Negras, Guatemala, with sculpture in bas-relief and at the same time one of the best examples of a Maya hieroglyphic inscription. Among the examples of work in clay are a wonderfully modeled seated figure of a woman with a second figure resting in her lap. Pottery is shown in painted, incised, and carved designs. There are black dishes with covers and handles representing jaguar heads and those of other animals, from burial vaults beneath the floors of rooms. A remarkable harmony of color is displayed on several pieces of the pottery and on a selection of sherds. The collection is rich in carved jades, showing incised design, bas-relief, and "the round," and ranging in color from black through all the tones of green to almost white. These are all from burial deposits and in many cases seem to have been broken purposely. Carved plaques and carved beads are perhaps the most noteworthy of these objects shown.

The ability of the Mayas and the people of the Isthmus in metal working is shown in the collection of gold and of gold and copper objects. Beaten masks of thin sheets of gold suggest similar Mycenæan objects. Most of the figurines were cast by the *cire perdue* method. The gold and copper bells show a variety of shapes, and the figurines present a surprising ability in metal casting. As with the jades, many of the figures show the result of fire. The skull of a peccary with a beautiful incised design and two carved shell disks show ability on other lines.

Photographs are exhibited which give some idea of the buildings of this Central American culture and many of the larger stone objects still remaining in the ruins. A reproduction of the Dresden codex illustrates

the manuscripts found in connection with this culture. Hanging frames show reproductions of the fresco painting on the walls of a temple in northern Yucatan. Spirited drawings of battle scenes and scenes of domestic life give still another side of this wonderful American civilization.

The exhibition will serve to show visitors ignorant of the field of American archeology that there was something in this country in pre-Columbian times worthy of the name of art, and the plan of the Peabody Museum might well be followed by other institutions if they would fulfill their function completely.

In the Fifty-fourth Report on the Peabody Museum of American Archæology and Ethnology, for 1910–11, Prof. F. W. Putnam, honorary curator, gives the following information respecting the proposed addition to the Museum building:

"The Visiting Committee appointed by the Board of Overseers held a meeting in the Museum, on January 12, for the purpose of discussing the possibility of completing the south wing of the University Museum in order to give to the anthropological section the much needed additional room and extended facilities. After a consideration of the plans, which had been prepared under my direction, for closing the gap between our present building and the southwestern corner of the Oxford Street façade, the Committee discussed the form of a report to the Board of Overseers. It was decided that such a report should present the scope, importance, and value of the Museum in its various lines of activity with a statement of its financial condition, and should be accompanied by an appeal to the Overseers on the part of the Committee for the completion of the building at an estimated cost of $125,000. This report was prepared and signed by the twelve members of the Committee, all of whom are graduates of the University. It was presented by the Chairman, Mr Markham, at the meeting of the Overseers on April 12, 1911."

The Thirteenth International Congress of Anthropology and Prehistoric Archeology, which met in 1906 at Monaco, designated Dublin as the next place of meeting, but as it was found to be impossible to carry out that plan, the permanent council selected Geneva as the place of meeting of the Fourteenth Congress, and the committee of organization has assigned the first week of September, 1912, as the time of the sessions. In addition to the usual program, excursions will be made to the most important prehistoric sites in Switzerland, where excavations will be conducted in the presence of the members. Full information will be furnished by the president of the committee of organization, M. E.

Pittard, 72 Florissant; or the secretary, M. W. Deonna, 16 Boulevard des Tranchées, Geneva.

DR DAVID CHRISTISON, one of the foremost antiquaries of Scotland, died January 21 in his eighty-second year. Dr Christison was secretary of the Society of Antiquaries of Scotland for sixteen years, from 1888 to 1904; he traveled over a great part of Scotland, making plans of the prehistoric forts and minutely examining them, and the results of his investigations he contributed in many interesting papers to the Society of Antiquaries. About twenty years ago he was Rhind lecturer, and chose as the subject of his course "The Prehistoric Forts of Scotland." These lectures were published in book form. "Early Fortifications in Scotland" was another of his works. In 1867, for the benefit of his health, Dr Christison visited Argentina, on which he wrote a number of papers.

LIEUT. GEORGE T. EMMONS, U.S.N., has been made an honorary fellow of the American Museum of Natural History in recognition of his services in furnishing information in regard to the Indians of the Northwest Coast and in promoting field work in that region, and Dr George Bird Grinnell has been elected an honorary fellow in recognition of his services in the development of the Museum's department of anthropology.

AT the tenth annual meeting of the South African Association for the Advancement of Science, to be held at Port Elizabeth from July 1 to 6, Mr W. A. Way will serve as president of Section D, devoted to anthropology, ethnology, education, history, mental science, philosophy, political economy, sociology, and statistics.

THE EIGHTH SESSION of the Congrès Préhistorique de France will be held at Angoulême (Charente), August 18–24, 1912. The president of the committee of organization is Dr Henry Martin, and the general secretary Dr Marcel Baudouin, 21 rue Linné, Paris.

DR WILLIAM T. BRIGHAM, director of the Bernice Pauahi Bishop Museum, Honolulu, has been made a corresponding member of the Imperial Academy of Science, St Petersburg, and of the Senckenbergische Naturforschende Gesellschaft at Frankfort.

PROF. GEORGE GRANT MACCURDY gave a public lecture in the University Chapel, Columbus, on the evening of March 1 by invitation of Omega Chapter of Sigma Xi of the Ohio State University, his subject being Pre-Columbian Art.

PROF. G. ELLIOT SMITH, F.R.S., has been appointed president of

the Section of Anthropology of the British Association for the Advancement of Science which is to meet at Dundee, beginning September 4th.

A COLLECTION of about 350 oil paintings of Indian subjects by George Catlin has been acquired by the American Museum of Natural History through the gift of Mr Ogden Mills, who procured them from Miss Elizabeth W. Catlin, a daughter of the artist.

To commemorate the signing of the treaty with the Creek Indians at Coleraine, Georgia, June 29, 1796, the Lyman Hall chapter of the Daughters of the American Revolution will place a bowlder at Coleraine Landing on June 29th next.

DR ROBERT H. LOWIE, of the American Museum of Natural History, delivered an address, "An Ethnologist in the Field," before the department of natural history of the College of the City of New York on March 21.

THE Third International Congress of Archeology will be held at Rome from October 9 to 12, 1912. The general secretary of the committee is Prof. Lucio Mariani, Piazza Venezia, 11, Rome.

AN anonymous donor has undertaken to give £20,000 to the University of Cambridge, to establish a chair of genetics, to be called the Balfour professorship of genetics, in honor of Mr A. J. Balfour.

PROF. GEORGE GRANT MACCURDY, of Yale University, is installing a hall of European prehistoric archeology for the American Museum of Natural History, in New York.

PROF. ARTHUR KEITH, curator of the museum, began on February 26 a course of six lectures at the Royal College of Surgeons of England, on phases in the evolution of man.

MISS GERDA SEBBELOV has been appointed assistant curator of the section of general ethnology in the Museum of the University of Pennsylvania.

BY THE WILL of Mrs Emily Howe Hitchcock, Dartmouth College will become the possessor of M. Hitchcock's Cesnola collection of Cyprus antiquities.

BY THE WILL of the late Mrs Joseph Drexel the Museum of the University of Pennsylvania has been bequeathed the sum of $70,000, of which $20,000 is to be used for making casts.

MR HARLAN I. SMITH has been elected honorary curator of archeology in the American Museum of Natural History.

American Anthropological Association

OFFICERS AND MEMBERS[1]

1912

OFFICERS

PRESIDENT, J. WALTER FEWKES, Washington.
VICE-PRESIDENT 1912, R. B. DIXON, Cambridge.
VICE-PRESIDENT 1913, GEORGE B. GORDON, Philadelphia.
VICE-PRESIDENT 1914, GEORGE A. DORSEY, Chicago.
VICE-PRESIDENT 1915, ALEXANDER F. CHAMBERLAIN, Worcester, Mass.
SECRETARY, GEORGE GRANT MACCURDY, New Haven.
TREASURER, B. T. B. HYDE, New York.
EDITOR, F. W. HODGE, Washington.
ASSOCIATE EDITORS, J. R. SWANTON, Washington; R. H. LOWIE, New York.
EDITORS OF *"Current Anthropological Literature"*: ALEXANDER F. CHAMBERLAIN, Worcester, and R. H. LOWIE, New York.
EXECUTIVE COMMITTEE: The President, Secretary, Treasurer, Editor (*ex-officio*), and W H. HOLMES, CHARLES PEABODY, and PLINY E. GODDARD.
COUNCIL: W J McGEE, F. W. PUTNAM, F. BOAS, W. H. HOLMES, J. W. FEWKES, A. F. CHAMBERLAIN, R. B. DIXON, G. B. GORDON, G. A. DORSEY, G. G. MACCURDY, B. T. B. HYDE, F. W. HODGE (*ex-officio*); H. I. SMITH, G. H PEPPER, W. C. FARABEE, J. R SWANTON, G. G. HEYE, H. J. SPINDEN, T. T. WATERMAN (1912); W. C. MILLS, H. MONTGOMERY, C. B. MOORE, W. K. MOOREHEAD, C. PEABODY, C. C. WILLOUGHBY, P. E. GODDARD, T. MICHELSON (1913); ALICE C. FLETCHER, C. P. BOWDITCH, S. CULIN, R. H. LOWIE, C. WISSLER, C. H. HAWES, E. SAPIR, —— (1914); A. E. JENKS, S. A. BARRETT, W. HOUGH, A. HRDLIČKA, A. L. KROEBER, A. M. TOZZER, F. G. SPECK, A. A. GOLDENWEISER (1915).

LIFE MEMBERS

MR EDWARD E. AYER,*
Railway Exchange Building, Chicago.
MR WILLIAM K. BIXBY,
805 Century Building, St. Louis.
MR CHARLES P. BOWDITCH,*
111 Devonshire st., Boston.
Mr P. G. GATES,
South Pasadena, Cal.
MR GEORGE G. HEYE,
60 Broadway, New York City.
MR ARCHER M. HUNTINGTON,*
Hispanic Society of America, Audubon Park, New York City.
M. LE DUC DE LOUBAT,*
53 Rue Dumont d'Urville, Paris.
MR CLARENCE B. MOORE,*
1321 Locust st., Philadelphia.

ACTIVE MEMBERS

ACADEMY OF NATURAL SCIENCES,
Philadelphia, Pa.
MR EDWARD D. ADAMS,*
71 Broadway, New York City.
ADELBERT COLLEGE LIBRARY,
Cleveland, Ohio.
DR CYRUS ADLER,
2041 N. Broad st., Philadelphia, Pa.
MR WILLIAM F. ALLEN,
University of Minnesota, Minneapolis.
DR JUAN B. AMBROSETTI,*
Santiago del Estero 1298, Buenos Aires, Argentina.
AMERICAN GEOGRAPHICAL SOCIETY,
Broadway and 156th st., New York City.
AMERICAN MUSEUM OF NATURAL HISTORY,
New York City.

[1] Members whose names are marked with an asterisk (*) are Founders of the Association.

AMERICAN PHILOSOPHICAL SOCIETY,
104 South Fifth st., Philadelphia, Pa.
DR ROBERT ANSLEY,
Indiana Harbor, Indiana.
ANTHROPOLOGY CLUB,
Herrick Hall, Yale University, New Haven, Conn.
MR E. E. BAIRD,
216 S. Main st., Poplar Bluff, Mo.
DR FRANK BAKER,
Zoölogical Park, Washington, D. C.
MR C. M. BARBEAU,
Geological Survey of Canada, Ottawa, Canada.
MR ROBERT D. BARDWELL,
Pittsfield, Mass.
DR W. C. BARNARD,
Seneca, Newton Co., Mo.
DR S. A. BARRETT,
Public Museum, Milwaukee, Wis.
DR GEORGE M. BARRIE,*
601 West 110th st., New York City.
DR ROBERT BENNETT BEAN,
4423 Pitt st., New Orleans, La.
MR BUCKNER BEASLEY,
132 Commerce st., Montgomery, Ala.
MISS MARTHA WARREN BECKWITH,
Vassar College, Poughkeepsie, N. Y.
MR THOMAS BECKWITH,
Box 437, Charleston, Mo.
BELOIT COLLEGE LIBRARY,
Beloit, Wisconsin.
PROF. HIRAM BINGHAM,
787 Prospect st., New Haven, Conn.
MRS THOMAS B. BISHOP,
2309 Washington st., San Franscisco, Cal.
BISHOP MUSEUM OF ETHNOLOGY,
Honolulu, H. I.
MR A. H. BLACKISTON,
628 Phelan Bldg., San Francisco, Cal.
PROF. FRANZ BOAS,*
Columbia University, New York City.
S. ALTESSE LE PRINCE ROLAND BONAPARTE,
10 Avenue d'Iéna, Paris, France.
MR A. O. BOWDEN,
Sedalia, Ky.
ERIC BOMAN,
Jakobsgatan 4, Stockholm, Sweden.
MR JACOB T. BOWNE,
121 Northampton st., Springfield, Mass.
MRS ELIZABETH M. BRACE,
223 East 17th st., New York City.
PROF. J. C. BRANNER,*
Stanford University, California.
MR PETER A. BRANNON,
Box 358, Montgomery, Ala.
MR H. M. BRAUN,
1618 Belmont ave., East St. Louis, Ill.
JUDGE JOSEPH A. BREAUX,
Supreme Court of Louisiana, New Orleans, La.
MISS ADELA C. BRETON,
Care Wilts and Dorset Bank, Bath, England.
REV. R. J. BRIGGS,
204 W. 7th st., Austin, Texas.
BROOKLYN INSTITUTE MUSEUM LIB.,
Eastern Parkway, Brooklyn, N. Y.
MR HENRY L. BROOMALL,
14 South ave., Media, Pa.
DR MacMILLAN BROWN,
Holmbank, Fendalton, Christchurch, New Zealand.
BROWN UNIVERSITY LIBRARY,
Providence, Rhode Island.
MR JAMES C. BRUSH,
Carbondale, Ill.
DR E. S. BURGESS,*
5 West 82d st., New York City.
MR DAVID I. BUSHNELL, JR.,
University, Va.
DR AMOS W. BUTLER,*
State House, Indianapolis, Indiana.
CALIFORNIA ACADEMY OF SCIENCES
San Francisco, Cal.
MR H. H. CAMMANN,*
84 William st., New York City.
MR JOSEPH P. CAMP,
2017 I st., N. W., Washington, D. C.
MR LOUIS B. CAPRON,
Oneonta, N. Y.
CARNEGIE LIBRARY,
Pittsburgh, Pa.
DR ALFREDO DE CARVALHO,
37 Aurora, Recife, Pernambuco, Brazil.
PROF. ALEXANDER F. CHAMBERLAIN,*
Clark University, Worcester, Mass.
CINCINNATI PUBLIC LIBRARY,
Cincinnati, Ohio.
CITY LIBRARY ASSOCIATION,
Springfield, Mass.
MRS KATE FOOTE COE,
Drawer 1, New Haven, Conn.
MR F. C. COLE,
Field Museum of Natural History, Chicago, Ill.
COLUMBIA UNIVERSITY LIBRARY,
New York City
REV. GEORGE W. COOKE,
49 Park ave., Wakefield, Mass.
CORNELL UNIVERSITY LIBRARY,
Ithaca, New York.
MR STEWART CULIN,*
Brooklyn Institute Museum, Brooklyn, N. Y.
MISS ANNA F. CUMMINGS,
Gilmore st., Box 8, N. Raynham, Mass.
PROF. BYRON CUMMINGS,
Salt Lake City, Utah.

MR E. S. CURTIS,
Seattle, Washington.
MR G. CUSACHS,
524 Esplanade, New Orleans, La.
PROF. H. B. DAVIS,
Normal School, California, Pa.
MR F. S. DELLENBAUGH,*
226 West 78th st., New York City.
MISS FRANCES DENSMORE,
Red Wing, Minn.
REV F. WARD DENYS,
1733 I st., N. W., Washington, D. C.
MR G. E. DIMOCK,*
Elizabeth, New Jersey.
DISTRICT OF COLUMBIA PUBLIC LIBRARY,
Washington, D. C.
DR JOSEPH KOSSUTH DIXON,
Wanamaker Auditorium, Philadelphia, Pa.
PROF. ROLAND B. DIXON,*
Harvard University, Cambridge, Mass.
PROF. R. E. DODGE,*
Teachers College, Columbia University, New York City.
PROF. H. H. DONALDSON,
Wistar Institute of Anatomy, Phila.
DR GEORGE A. DORSEY,*
Field Museum of Natural History, Chicago.
MRS M. A. DRAKE,
220 S. Main st., Franklin, N. H.
MR WILBERFORCE EAMES,
New York Public Library, N. Y. City.
DR. N. B. EMERSON,
Honolulu, H. I.
LIEUT. GEORGE T. EMMONS, U.S.N.,
Princeton, N. J.
PROF. GEO. ENGERRAND,
Institute Geologico, Mexico, D. F.
DR WM. C. FARABEE,
Peabody Museum, Cambridge, Mass.
MRS EVA S. FENYES,
P. O. Box W, Pasadena, Cal.
MR ROBERT D. FERRON,
553 8th Av., Salt Lake City, Utah.
DR J. WALTER FEWKES,*
Bureau of American Ethnology, Washington, D. C.
DR MAURICE FISHBERG,
1337 Madison ave., New York City.
PROF. IRVING FISHER,
460 Prospect st., New Haven, Conn.
MISS ALICE C. FLETCHER,*
214 First st., S. E., Washington, D. C.
DR J. M. FLINT,*
Stoneleigh Court, Washington, D. C.
DR DANIEL FOLKMAR,*
1839 Ontario Place, Washington, D. C.
MRS. EDNA H. FORD,
Waupun, Wisconsin.
THE FRANCISCAN FATHERS,
St. Michaels, Ariz.
MR ROBERT GRAHAM FULLER,
Peabody Museum, Cambridge, Mass.
DR WILLIAM H. FURNESS, 3d,
University of Pennsylvania Museum, Philadelphia.
PROF. WILLIAM E. GATES,
Point Loma, Cal.
MR WILLIAM F. G. GEISSE,
R. F. D. No. 2, Great Barrington, Mass.
GEOLOGICAL SURVEY OF CANADA,
Ottawa, Canada.
PROF. FRANKLIN H. GIDDINGS,
Columbia University, New York City.
DR ALBERT N. GILBERTSON,
University of Minnesota, Minneapolis, Minn.
DR P. E. GODDARD,
American Museum of Natural History, New York City.
MR E. RALSTON GOLDSBOROUGH,
Frederick, Maryland
PROF. GEORGE BYRON GORDON,
University Pennsylvania Museum, Phila
GRAND RAPIDS PUBLIC LIBRARY,
Grand Rapids, Mich.
MR PERCY T. GRIFFITH.
66 Pine st., New York City.
DR GEORGE BIRD GRINNELL,*
238 East 15th st., New York City.
MR FRANCIS T. HAGADORN,
1909 Wallace ave., (Van Nest), Bronx, New York City.
MR STANSBURY HAGAR,*
48 Wall st., New York City.
MR ROBERT C. HALL,
240 Fourth ave., Pittsburgh, Pa.
MR E. J. HALLORAN,
University of Pennsylvania Dormitories, Philadelphia, Pa.
MRS JOHN HAYS HAMMOND,
Sheridan Circle, Washington, D. C.
MR NEWTON H. HARDING,
110 N. Pine St., Chicago, Ill.
MR M. RAYMOND HARRINGTON,
University of Pennsylvania Museum, Philadelphia.
MR H. H. HARRISON,
60 Broadway, New York City.
MR E. SIDNEY HARTLAND,
Highgarth, Gloucester, England.
PROF. C. V. HARTMAN,
Royal Ethnographical Museum, Stockholm, Sweden.
PROF. WILLIAM W. HASTINGS,
Battle Creek, Mich.
PROF. CHARLES H. HAWES,
Dartmouth College, Hanover, N. H.

MR CLARENCE L. HAY,
Peabody Museum, Cambridge, Mass.
MRS PHŒBE A. HEARST,*
Pleasanton, California.
REV. JOSEPH C. HERRICK,
St. Joseph's Seminary, Yonkers, N. Y.
MRS R. F. HERRICK,
Loleta, Humboldt Co., Cal.
MR EDWARD W. HEUSINGER,
113 City st., San Antonio, Texas.
DR EDGAR L. HEWETT,*
School of American Archæology, Sante Fé, N. Mex.
MR CHARLES HILL-TOUT,
Bucklands, Abbotsford, B. C.
MR PHILIP HINKLE,
113–115 East Fourth st., Cincinnati, O.
MR F. W. HODGE,*
Bureau of American Ethnology, Washington, D. C.
DR CHARLES VON HOFFMAN,
2669 California st., San Francisco, Cal.
DR WILLIAM J. HOLLAND,*
5545 Forbes ave., Pittsburgh, Pa.
PROF. WILLIAM H. HOLMES,*
U. S. National Museum, Washington, D. C.
MR HOMER E. HOOPES,
Media, Pennsylvania.
MR LOUIS J. HOPKINS,
Winnetka, Illinois.
DR WALTER HOUGH,*
National Museum, Washington, D. C.
HOWARD MEMORIAL LIBRARY,
New Orleans, La.
DR WILLIAM F. HOWAT,
832 Hohman st., Hammond, Ind.
DR GEORGE P. HOWE,
Peabody Museum, Cambridge, Mass.
MR HENRY R. HOWLAND,
Library Building, Buffalo, N. Y.
DR ALEŠ HRDLIČKA,
National Museum, Washington, D. C.
MR J. F. HUCKEL,*
Union Station Annex, Kansas City, Mo.
MR ANDREW F. HUNTER,
Barrie, Ontario, Can.
DR H. M. HURD,*
Johns Hopkins Hospital, Baltimore, Md.
DR JULIUS H. HURST,
Monte Cito, Santa Barbara, Cal.
MR DAVID HUTCHESON,*
Box 4, East Capitol sta., Washington, D. C.
MR B. TALBOT B. HYDE,
11 Broadway, New York City.
ILLINOIS UNIVERSITY LIBRARY,
Champaign, Ill.
INDIANA STATE LIBRARY,
Indianapolis, Indiana.
IOWA STATE LIBRARY,
Iowa City, Iowa.
MRS PERCY JACKSON,
63 E. 52d st., New York City.
DR A. JACOBI,
19 East 47th st., New York City.
MRS WILLIAM JAMES,
Merida, Yucatan.
MR L. W. JENKINS,
East India Marine Hall, Salem, Mass.
PROF. ALBERT ERNEST JENKS,*
University of Minnesota, Minneapolis.
SR JACINTO JIJON Y CAAMANO,
Quito, Ecuador.
DR WALDEMAR JOCHELSON,
Imperial Russian Geographical Soc'y, St. Petersburg, Russia.
JOHN CRERAR LIBRARY,
Chicago, Ill.
DR HERMAN F. TEN KATE,
Care Martinus Nyhoff, The Hague, Netherlands.
PROF. FRANCIS W. KELSEY,
University of Michigan, Ann Arbor.
MISS GEORGIANA G. KING,
Bryn Mawr College, Bryn Mawr, Pa.
DR H. KINNER,*
1103 Rutger st., St. Louis, Mo.
DR WILLIAM B. KIRKHAM,
103 Everit st., New Haven, Conn.
MISS MARY LOIS KISSELL,
American Museum of Natural History, New York City.
DR GEORGE M. KOBER,*
1819 O st., Washington, D. C.
PROF A. L. KROEBER,*
Affiliated Colleges, San Francisco, Cal.
MR FRANCIS LA FLESCHE,
214 First st., S. E., Washington, D. C.
DR SAMUEL A. LAFONE QUEVEDO,
Museo de La Plata, La Plata, Argentina.
SR CARLOS M. LARREA,
Apartado Postal 279, Quito Ecuador.
DR BERTHOLD LAUFER,
Field Museum of Natural History, Chicago.
PROF. R. LEHMANN-NITSCHE,*
Museo de la Plata, La Plata, Argentina.
LELAND STANFORD JR. UNIVERSITY LIBRARY, Stanford University, Cal.
DR J. S. LEMON,*
31 Park st., Gardner, Mass.
DR RODOLFO LENZ,
Casilla 844, Santiago de Chile, Chile.
MR FRANK LEVERETT,
1724 S. University ave., Ann Arbor, Mich
MR EDWARD LINDSEY,*
Warren, Pa.
DR R. A. DOUGLAS LITHGOW,
1 Mountfort st., Boston, Mass.

MR M. C. LONG,*
Missouri ave. and Main st., Kansas City, Missouri.
REV. DR JAMES WILLIAM LOWBER,
1706 Brazos st., Austin, Texas.
DR ROBERT H. LOWIE,
American Museum of Natural History, New York City.
PROF. GEORGE W. A. LUCKEY,
1439 R st., Lincoln, Neb.
DR CARL LUMHOLTZ,*
129 E. 17th st., New York City.
LYME PUBLIC LIBRARY,
Lyme, Mass.
PROF. GEORGE GRANT MacCURDY,*
Yale University, New Haven, Conn.
DR J. B. McGEE,*
8117 Woodland ave., Cleveland, Ohio.
DR W J McGEE,*
Dept. of Agriculture, Washington, D. C.
MR T. A. McKAY,
Box 273, Edgewater, Colo.
DR W. L. MARSDEN,
Box 22, Burns, Oregon.
MISS MYRA B. MARTIN,*
11 William st., New York City.
MR JOHN ALDEN MASON,
212 West Chelten ave., Germantown, Pa.
MR MARK MASON,
121 E. 44th st., Chicago, Ill.
MR ALBERT MATTHEWS,*
Hotel Oxford, Boston, Mass.
MR JOHN D. MATTSON,
2017 I st., N. W., Washington, D. C.
REV. FREDERICK T. MAYER-OAKES,
Berlin, Mass.
MR WILLIAM H. MECHLING,
University of Pennsylvania Museum, Philadelphia, Pa.
DR C. HART MERRIAM,
The Northumberland, Washington, D. C.
MISS ELIZABETH METCALF,
140 Elm st., Worcester, Mass.
DR TRUMAN MICHELSON,
Bureau of American Ethnology, Washington, D. C.
MR W. C. MILLS,*
State University, Columbus, Ohio.
DR M. G. MILLER,
4018 Spring Garden st., Philadelphia, Pa.
MILWAUKEE PUBLIC MUSEUM,
Milwaukee, Wis.
REV. DR. CHARLES A. MITCHELL,
Bellevue, Nebraska.
PROF. WILL S. MONROE,
State Normal School, Upper Montclair, N. J.
PROF. HENRY MONTGOMERY,
Museum of the University of Toronto, Toronto, Canada.
MR JAMES MOONEY,*
Bureau of American Ethnology, Washington, D. C.
MR WARREN K. MOOREHEAD,*
Phillips Academy, Andover, Mass.
REV. A. G. MORICE, O. M. I.,
Winnipeg, Canada.
PROF. EDWARD S. MORSE,
Peabody Museum, Salem, Mass.
MR JOHN MURDOCH,*
38 Webster st., Allston, Mass.
MUSEO NACIONAL DE BUENOS AIRES,
Buenos Aires, Argentina.
MR BENJAMIN F. NEAD, JR.,
Harrisburg, Pa.
NEBRASKA UNIVERSITY LIBRARY,
Lincoln, Neb.
MR NELS C. NELSON,
American Museum of Natural History, New York City.
MR WILLIAM NELSON,*
8 Church st., Paterson, N. J.
NEWBERRY LIBRARY,
Chicago, Illinois.
DR C. F. NEWCOMBE,
138 Dallas Road, Victoria, B. C.
NEW HAMPSHIRE HISTORICAL SOCIETY.
Concord, New Hampshire.
NEW YORK PUBLIC LIBRARY,
New York City.
MISS GRACE NICHOLSON,
46 North Los Robles ave., Pasadena California.
REV. J. B. NIES,*
Hotel St. George, Clark st., Brooklyn, N. Y.
MR LUTHER A. NORLAND,
La Jara, Conejos co., Colo.
MR ARTHUR W. NORTH,
University Club, Salt Lake City, Utah.
MRS ZELIA NUTTALL,*
Casa Alvarado, Coyoacán, D. F., Mexico.
DR FÉLIX F. OUTES,
Museo Nacional de Historia Natural, Buenos Aires, Argentina.
MR C. L. OWEN,*
Field Museum of Natural History, Chicago.
DR THOMAS M. OWEN,
State Dep't of Archives and History, Montgomery, Ala.
HON. VICTOR H. PALTSITS,
1855 Morris ave., New York City.
DR WILLIAM F. PARKS,
Frisco Bldg., 9th and Olive sts., St. Louis, Mo.
MR H. H. PARSONS,*
84 Griswold st., Detroit, Michigan.
DR CHARLES PEABODY,*
197 Brattle st., Cambridge, Mass.

PEABODY MUSEUM,
Cambridge, Mass.
PROF. J. E. PEARCE,*
High School, Austin, Texas.
MR HAROLD PEIRCE,*
222 Drexel Building, Philadelphia, Pa.
MR GEORGE, H. PEPPER,*
255 Roseville ave., Newark, N. J.
PROF. G. H. PERKINS,*
Burlington, Vermont.
DR C. A. PETERSON,*
347 Church st., Webster Groves, Mo.
DR H. PITTIER,*
Bureau of Plant Industry, Washington.
DR ALEXANDER PRATT, JR.,*
1221 Stratford ave., Bridgeport, Conn.
PROF. J. DYNELEY PRINCE,*
Columbia University, New York City.
MR FRANK PROCTOR,
Franklin, N. H.
DR T. MITCHELL PRUDDEN,*
160 West 59th st., New York City.
MISS ELIZABETH DUNCAN PUTNAM,
Davenport, Iowa.
PROF. F. W. PUTNAM,*
Peabody Museum, Cambridge, Mass.
MR EDW. KIRBY PUTNAM,
Davenport Academy of Science, Davenport, Iowa.
MR JOHN T. REEDER,
318 College ave., Houghton, Mich.
DR ADOLPH C. REICHARD,
Marine Biological Laboratory, Heligoland, Germany.
MRS THOMAS ROBERTS,
The Aldine, Philadelphia, Pa.
MR MORGAN P. ROBINSON,
113 South Third st., Richmond, Va.
DR WALTER E. ROTH,
Pomeroon River, British Guiana.
ST. LOUIS MERCANTILE LIBRARY,
St. Louis, Mo.
DR EDWARD SAPIR,
Geological Survey, Ottawa, Ont.
MR HOMER E. SARGENT,
47 Harvard st., Worcester, Mass.
MR SIDNEY B. SCHUYLER,
Webster Groves, Mo.
MR HERBERT F. SCHWARTZ,
255 W. 108th st., New York City.
COL. H. L. SCOTT, U. S. A.,*
Fort Sam. Houston, Texas.
MISS S. A. SCULL,*
401 Water st., Smethport, Pennsylvania.
MRS MARIANNA P. SEAMAN,*
1424 Eleventh st., N. W., Washington, D. C.
MISS GERDA SEBBELOV,
University of Pennsylvania Museum, Philadelphia, Pa.
MR A. T. SINCLAIR,
37 North Beacon st., Allston, Mass.
MR ALANSON SKINNER,
41 Sherman ave., Tompkinsville, N. Y.
DR C. E. SLOCUM,*
218 13th st., Toledo, Ohio.
MR HARLAN I. SMITH,
Geological Survey, Ottawa, Ont.
MISS LAUREN P. SMITH,
219 East Market st., Warren, Ohio.
PROF. WILLIAM BENJAMIN SMITH,
Tulane University, New Orleans, La.
DR OLOF SOLBERG,
Historical Museum, Christiania, Norway.
DR FRANK G. SPECK,
Hackensack, N. J.
DR H. J. SPINDEN,
American Museum of Natural History, New York City.
PROF. EDWARD ANTHONY SPITZKA,
Jefferson Medical College, Philadelphia.
PROF. FREDERICK STARR,*
Chicago University, Chicago, Illinois.
DR KARL VON DEN STEINEN,
1 Friedrichstr., Steglitz, Berlin, Germany.
DR JAMES F. STEVENS,*
1136 O st., Lincoln, Nebraska.
DR WILLIAM A. STONE,
1102 W. Main st., Kalamazoo, Mich.
MR BRADSHAW H. SWALES,
Grosse Ile, Michigan.
DR JOHN R. SWANTON,*
Bureau of American Ethnology, Washington, D. C.
MISS GRACE E. TAFT,
50 West 93d st., New York City.
MR ERASTUS TEFFT,
Hanover Bank Building, New York City, N. Y.
MR JAMES TEIT,
Spences Bridge, B. C.
DR JULIO CÉSAR TELLO,
Weichert's Hotel, Kochstr. 74, Berlin, S. W., Germany.
MR BENJAMIN THAW,*
Morewood place, Pittsburgh, Pa.
PROF. W. I. THOMAS,
Chicago University, Chicago, Ill.
PROF. E. L. THORNDIKE,*
Columbia University, New York City. N. Y.
DR TOWNSEND W. THORNDIKE,
20 Newbury st., Boston, Mass.
DR JOE H. TODD,
Wooster, Ohio.
MR WILLIAM WALLACE TOOKER,*
70 Main st., Sag Harbor, New York.
TORONTO UNIVERSITY LIBRARY,
Toronto, Canada.

DR LUIS MARIA TORRES,
Museo Nacional, Buenos Aires, Argentina.
DR A. M. TOZZER,*
Peabody Museum, Cambridge, Mass.
UNIVERSITY OF PENNSYLVANIA MUSEUM,
33d and Spruce sts., Philadelphia, Pa.
MR H. H. VAIL,*
American Book Co., Washington Square, New York City.
MRS EDW. PLEASANTS VALENTINE,
411 E. Franklin st., Richmond, Va.
MR. THOMPSON VAN HYNING,
Historical Department of Iowa, Des Moines, Iowa.
MR F. W. VOLLMANN,
Stebnitz i/Sachsen, Germany.
HON. R. E.-M. GREGORIE DE WALLANT,
Millionaya 25K 64, St. Petersburg, Russia.
MR W. D. WALLIS,
University of Pennsylvania Museum, Philadelphia, Pa.
DR ATREUS WANNER,
York, Pennsylvania.
MISS H. NEWELL WARDLE,*
Academy of Natural Sciences, Phila.
MR J. OGLE WARFIELD,
Chestnut Hill, Philadelphia, Pa.
MRS MURRAY WARNER,
204 Dearborn st., Chicago, Ill.
PROF. H. C. WARREN,*
Princeton, New Jersey.
WATKINSON LIBRARY,
Hartford, Conn.
PROF. HUTTON WEBSTER,
University of Nebraska, Lincoln, Neb.
MR PHILIP WELCH,
Duquesne, Pa.
MR GEORGE X. WENDLING,
996 Haight st., San Francisco, Cal.
DR M. F. WHEATLAND,*
84 John st., Newport, Rhode Island.
DR HENRY M. WHELPLEY,
2342 Albion place, St. Louis, Mo.
MR JOHN JAY WHITE, JR.,
1734 N st. N. W., Washington, D. C.
JUDGE JAMES WICKERSHAM,*
Fairbanks, Alaska.
MR CHARLES W. WIEGEL,
Olympia, Wash.
DR HARRIS H. WILDER,
Smith College, Northampton, Mass.
MR G. F. WILL,
Bismarck, North Dakota.
MR BLAIR S. WILLIAMS,
25 Broad st., New York City.
HON. E. T. WILLIAMS,
Department of State, Washington, D. C.
MR C. C. WILLOUGHBY,*
Peabody Museum, Cambridge, Mass.
MR J. HOWARD WILSON,
Castine, Maine.
PROF. N. H. WINCHELL,
Old Capitol, St. Paul, Minn.
DR CLARK WISSLER,
American Museum of Natural History, New York City.
DR FREDERICK A. WOODS,
1006 Beacon st., Brookline, Mass.
DR SAMUEL B. WOODWARD,
58 Pearl st., Worcester, Mass.
DR DEAN C. WORCESTER,*
Manila, Philippine Islands.
MR CHRISTOPHER WREN,
Centre st., Plymouth, Pennsylvania.
PROF. G. FREDERICK WRIGHT,
Oberlin, Ohio.
DR JONATHAN WRIGHT,
2d ave. and 20th st., New York City.
MR JOHN M. WULFING,
3448 Longfellow Boulevard, St. Louis, Missouri.
REV. JEREMIAH ZIMMERMAN, D. D., LL. D.
107 South ave, Syracuse, N. Y.

DECEASED MEMBERS

PAUL EDMOND BECKWITH,* 1907.
DAVID BOYLE,* 1911.
GUSTAV BRÜHL,* 1903.
ALFREDO CHAVERO, 1906.
M. A. CLANCY,* 1902.
WILLIAM E. DODGE,* 1903.
GEORGE J. ENGLEMANN,* 1903.
WESTON FLINT,* 1906.
DANIEL GARCIA, 1907.
JOHN WALTER HASTINGS, 1908.
HENRY W. HAYNES,* 1912.
ESTHER HERMANN,* 1911.
JOHN H. HINTON,* 1905.
RICHARD HODGSON,* 1905.
WILLIAM JONES, 1909.
WALTER S. LOGAN,* 1906.
OTIS TUFTON MASON,* 1908.
WASHINGTON MATTHEWS,* 1905.
WILLIAM WELLS NEWELL, 1907.
J. W. POWELL,* 1902.
CORNELIUS E. RUMSEY, 1910(?).
FRANK RUSSELL,* 1903.
HORATIO N. RUST, 1906.
P. S. SPARKMAN, 1907.
ROLAND B. STEINER,* 1906,
WILLIAM G. SUMNER, 1910.
EDW PLEASANTS VALENTINE, 1908.
JOHN HENRY WRIGHT, 1908.